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The JOURNAL Of The
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THE JOURNAL

of the

OKLAHOMA STATE MEDICAL ASSOCIATION

EDITORIALS

A PUZZLING PARADOX

While many people living in many countries less fortunate than our own have an annual individual income of less than $50.00 and die from malnutrition and disease before they reach the age of 35, our hearts are softened and our purse strings loosened. We send billions in money and the equivalent in knowledge, skills, machinery and personnel.

While this worthy humanitarian program is in the process of execution, our own socio-economic and political policies in Washington and the stealthy insinuation of socialistic doctrines in our schools are preparing us for a national decline which will bring poverty, malnutrition, disease and death with abbreviated longevity paralleling that we see so clearly in other countries now characterized as underprivileged.

In his *Ode to the Roman People*, Horace extolled the adequacy of Rome's defensive powers until destroyed by internal strife and corruption which he epitomized as follows, ". . . but we, an impious race, whose blood is devoted to perdition shall destroy her (Rome); and this land shall again be possessed by wild beasts."

What we are doing to help people in unfortunate countries is most commendable, what we are doing toward the destruction of the freedoms and the opportunities our American children have a right to expect is damnable and unforgivable.

The least we can do is to let our lawmakers and our bureaucrats know what we think. Do we think enough of our own future as American citizens and our children and our American way of life to write our protest. Only concerted, militant, crusading against dishonesty and corruption in government and the growth of socialization with governmental support can save the country and redeem our traditional reputation for individual and national integrity.

WORTH QUOTING

In the light of world affairs and present day confusion, the following words from Pasteur spoken at the opening of the Pasteur Institute are of great significance:

"Two contrary laws stand today opposed; one a law of blood annd death, which, inventing daily new means of combat, obliges the nations to be ever prepared for battle; the other a law of peace, of labor, of salvation, which strives to deliver man from the scourges which assail him. One looks only for violent conquest; the other for the relief of suffering humanity. The one would sacrifice hundreds of thousands of lives to the ambition of a single individual; the other places a single human life above all victories. The law of which we are the instruments essays even in the midst of carnage to heal the wounds caused by the law of war."

OWED TO OXYGEN

When we were only unicellular organisms groping in slime, we were dependent upon oxygen. Through eons of time we existed by virtue of oxygen though utterly ignorant of its presence. Our debt is great and long overdue. Not until the turn of the 18th Century did we learn about gasses and the modern theory of respiration. In 1757 Joseph Black discovered hydrogen (1766). Nitrogen was discovered by Rutherford (1772); oxygen by Priestly and Scheele (1771), and Lavoisier (1775).

Now we know that one-fifth of the atmosphere is oxygen and that it composes eight-ninths of water and about one-half of the globe's crust.

According to recent investigations, our simian forbears were elevating the oxygen content of their blood when they swung down from the trees and exercised their brains to draw up the first declaration of human independence at the foot of a tree (Hooton). John Wheelock (1754-1817) was

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doing the same when he opened a medical course at Dartmouth College with this prayer:

"O, Lord, we thank Thee for the oxygen gas; we thank Thee for the hydrogen gas; and for all the gases. We thank Thee for the cerebrum, the cerebellum and the oblongata." Wheelock did not know that he was drawing upon a high level of oxygen when he uttered this prayer; he did not realize how dependent the brain is upon oxygen. Nevertheless, he placed the objects of his gratitude in their proper order.

Now comes Doust, Lovell and Schneider[1] with experimental evidence connecting oxygen with the long recognized mystery of sleep and mental alertness. They have observed that sleep is associated with a low oxygen blood level (87 to 88 per cent) and that during the normal waking hours the level is about 96 per cent. Evidently the oxygen level was running low when, in *A Midsummer Night's Dream*, Shakespeare said, "and I pray you let none of your people stir me. I have an exposition of sleep come upon me."

With all our knowledge we can say no more than was said by Cervantes . . . "sleep is the best cure for waking troubles."

1. Doust, J. W. Lovell; and Schneider, Robert A.: Studies on the Psysiology of Awareness: Anoxia and the Levels of Sleep. Brit. Med. J., p. 4756 (March 1) 1952.

PRAYER

The physician who does not pray for guidance is lost; the psysician who does not pray for mercy has buried his shortcomings in the fathomless depths of his egotism and ignorance—God help him.

TWO SMALL BOOKS

Even in Solomon's day it seemed there was no end to making of books. Yet William Osler would not set sail without them, though he recognized words as ". . . dangerous things. They change colour like a chameleon, and they return like a boomerang."

The little Book by Edwin P. Jordan and William P. Shepard,[1] *Rx for Medical Writing* is designed to help the medical writer to choose words with a definite meaning and to give them a fast color and a fixed place in the expression of thought. In a few pages he supplies the necessary ingredients and shows how to mix them.

Dr. Walter R. Bett, who teaches medical writing in Great Britain said in an address on the art and techinque of medical writing at the University of Oklahoma School of Medicine, that if he had known such a book had been written on the subject, he would have considered his address unnecessary. Even case records deserve good writing; medical reporting for publication demands it. Doctor Jordan's little book of 112 pages tells how it is done.

In the handy pocket size *Osler, the Man and the Legend*, Walter R. Bett[2] has produced a fine example of good writing. With well chosen words he has packed 125 pages with more pertinent facts about William Osler and his work than can be found in any comparable volume devoted to the master clinician, teacher, author, bibliophile and medical humanist. If there is a "must" among books on the cultural side, this is it. Read and write while you run, that something may remain when the race is done.

Since the charm of Osler's physical presence passed more than 30 years ago, we should look in this fascinating little volume ". . . . for the reasons why Osler should still seem to float so naturally on the unemotional ocean of our professional lives."

1. Rx for Medical Writing. Edwin P. Jordan, M.D. and William C. Shepard. W. B. Saunders Company, Philadelphia, London, 1952.
2. Osler: The Man and the Legend. W. R. Bett, William Heinemann, London, 1951. 15s. net.

A GREAT VOICE

Are we losing our freedom because this voice is silent? Why not revive the murmur by letters to our representatives in Washington from the hills and vales throughout the country. Think on this from Woodrow Wilson and write:

"The great voice of America does not come from the seats of learning. It comes in a murmur from the hills and woods and farms and factories and the mills, rolling and gaining volume until it comes to us from the homes of common men."

TRUSTY WEAPON PRESENTED TRUSTEES

Believe it or not, a gavel made from a piece of wood from the reconstructed White House is now in the hands of the Trustees of the American Medical Association. Immediately two questions arise; how did the wood escape the political termites and who is the donor?

Let us hope it is a good omen but for the present we suggest that the Trustees knock on wood—wood of the White House.

Scientific Articles

"CARCINOMA OF THE CERVICAL STUMP"*

(A Plea for Early Diagnosis and Prevention)

GERALD ROGERS, M.D., F.A.C.S.

OKLAHOMA CITY, OKLAHOMA

The incidence of carcinoma of the cervical stump in collected statistics, varies from 0.1 to 7.4 per cent of sub-total hysterectomys performed. Ward and Sackett[1] report, in their clinic, 56 cases in 752 patients, a percentage of 7.4 per cent. Farrar[2], at Women's Hospital in New York City, found stump cancer in seven per cent of the cervical cancers treated in their hospital. Healy and Arneson[3] found 67 stump cancers, (2.6 per cent) in 2,600 cancers of the servix at the Memorial Hospital in New York.

A study of the incidence of cancer in the cervical stump, after supra vaginal hysterectomy, more generally known as "carcinoma of the cervical stump," naturally includes a consideration of associated problems. One of these is to ascertain how often cancer is found, or develops, in the cervical stump. The combined reports of others may be noted, as well as cases occurring under one's own observation. Eight patients with carcinoma of the cervical stump seen in five years in my private and consultation practice inspired this study. A second problem is whether the cancer of the cervical stump was overlooked at the time of the hysterectomy or whether it developed sometime afterwards, and what treatment has to offer these patients. A third problem, and one of greatest importance, is how may this unfortunate complication be avoided.

The patients developing carcinoma in the stump of the cervix are usually divided into two groups:

1. True carcinoma of the stump: those which occur in the stump three or more years after surgery.
2. Persistent carcinoma of the cervical stump: those which occur in the stump less than than four years after the removal of the corpus.

Different authors use from one to three years as the time interval following hysterectomy in formulating standards as to which are true carcinomas of the stump. Three years is the most commonly accepted period. The former group usually presents a mistaken diagnosis. It is likely that the lesion was there at the time of the sub-total hysterectomy but was not detected. This is the group that can be decreased by more adequate evaluation of the cervix if complete removal is not contemplated.

The diagnosis of cervical carcinoma in its asymptomatic stage may be extremely difficult, even for the experienced gynecologist. Early carcinoma is characterized by histological changes which produce no gross lesions. Symptomatic carcinoma, in more advance stages, can be positively diagnosed only by biopsy or cytologic studies. Cervices of normal appearance, or having mild degrees of cervicitis and erosion, may harbor carcinoma. The diagnosis of cervical carcinoma always depends ultimately on pathologic study, whether the carcinoma be early or well advanced. No method of palpation or visualization of the cervix will dependably enable one to decide that a patient does or does not have carcinoma.

Diagnostic methods have been perfected in recent years to stimulate interest in the diagnosis of early lesions of the cervix. Schiller's[4] iodine test, I feel, to be of distinct value. Not as a specific test for cancer, but its chief value is in indicating to the physician which areas should be biopsied. It is based upon the observation that normal aquamous epithelial cells contain glycogen

*Presented at the Annual Meeting of the Oklahoma State Medical Association, May 19, 1952, Oklahoma City, Oklahoma.

which stains dark brown with Lugols Solution. Cancer cells exhibit excessive glycolytic activity and, therefore, do not take the stain. The exfolliative cellular methods first introduced by Papanicolaou and Traut,[5] furnish a simple and reliable method of preliminary diagnosis and determination of which cervices should have additional examination. If the smears or spreads contain cells indicative of neoplastic activity, further investigative and confirmatory studies must be undertaken. Various types of endocervical curettes also furnish valuable aid in obtaining strips of endocervical mucosa to determine those carcinomas which may be present within the canal. It is to be emphasized, however, that the actual diagnosis of cervical carcinoma depends upon actual material recovered from biopsy properly embedded and stained. The only real controversy concerning the treatment of carcinoma of the cervical stump, has to do with prophylaxis. Arguments continue and the literature is replete with articles advocating total versus supravaginal hysterectomy in benign surgical lesions of the uterus. Proponents of total hysterectomy emphasize the incidence of carcinoma arising in the cervical stump which the literature shows to be about eight of every 1000 supravaginal hysterectomy cases. Though not germain to this discussion they also cite the frequency with which infections and other benign complications arise in the retained cervical stump.

To validate the claim that total hysterectomy should be done to salvage patients otherwise doomed to develop carcinoma of the cervical stump, it is obvious that total hysterectomy should show a mortality as low as that of supravaginal hysterectomy. Prior to the development of modern chemotherapeutic and antibiotic drugs, the statistics showed definitely a higher mortality with the total procedure. More recent figures, however, show that there is little, if any, difference in the mortality between the two operations when performed by capable pelvic surgeons. If one elects to do supravaginal hysterectomy in some cases, and totals in others, where should the dividing line be drawn? When the cervix is allowed to remain, there is some question as to the amount of protection offered by deep conization of the cervix from above and either cauterization or conization of the vaginal portion from below.

Ward flatly states that conization and cautery offer nothing in the prevention of carcinoma of the cervical stump since over 80 per cent arise from the portio vaginalis and he adds that the procedures increase the morbidity of the operation by opening paths of infection when the usually infected cervix is disturbed. It is recommended that total, in preference to supravaginal sub-total hysterectomy be performed in the surgical treatment of benign lesions of the uterus, and that sub-total hysterectomy, if done at all, be ultilized only in the selected cases in which a very careful examination indicates the cervix to be entirely healthy and without the presence of any pre-cancerous lesions or hidden malignancy. We certainly do not advocate the total procedure when it involves undue hazard or frank foolhardiness.

It is hoped, in this way, to salvage the estimated eight out of every 1000 supravaginal hysterectomy cases who subsequently develop carcinoma of the cervical stump. Our plea is not for complete hysterectomy in all patients requiring removal of the uterus. We feel that this decision rests with the individual surgeon. We do wish to vigorously emphasize that the operator should know the status of the cervix prior to any type of hysterectomy. When contemplating a hysterectomy, the cervix should be thoroughly examined. The presence of a myoma does not eliminate carcinoma of cervix. On the contrary, many authors believe that carcinoma of the cervix occurs more frequently in the patients with myoma of the uterus. Likewise, nulliparity does not mean that a patient does not have, or will always remain free from carcinoma of the cervix. Mere inspection of the cervix is not enough. If the cervix has a normal appearance, and the operator is not planning a complete operation, he should, at least, obtain cervical cytologic smears to be sure there is no hidden neoplastic disease. The responsibility does not end here. After the incomplete operation, the patient should be followed and the cervix checked at periodic intervals. If the cervix is eroded or lacerated, it should not be divorced from the uterine corpus by the sub-total method. The patient deserves the complete operation.

Many feel that the sub-total hysterectomy combined with coning of the cervix, either above or below, is adequate. This is not our belief. It is impossible to remove the entire portio vaginalis by this method, hence carcinoma is still a threat. It is to be remembered as an accepted fact, that the incidence of carcinoma of the cervix is no higher in

the stump than carcinoma of the cervix in the intact uterus. The accident to be avoided is the catastrophic one of amputating the corpus thru a cancerous cervix or the embarrassing one of discovering a few days, or a few months, after the incomplete hysterectomy, that the patient has cervical cancer. Unsuspected carcinomas of the cervix are not uncommonly found in uteri removed by total hysterectomy. It must be conceded that knowing of this prior to operation would enable the surgeon to render more intelligent and beneficial service to his patients.

The treatment is the same as for any carcinoma of the cervix. By intracavitary use of radium, only one capsule can be placed in the cervix. A fairly effective dose of gamma Roentgens can be given by use of a colpostat with wide lateral placement of the sources of radium. The results of this treatment are little short of those obtained in cancer of the cervix in general which, in our experience, is 40 per cent of five year survivals. The use of interstitial needles offers another means of application. In advanced cases, a radium plaque held in place with a rubber bath sponge is useful.

Roentgen therapy, by the transvaginal cone, may in some of these cases be superior to intracavitary radium, especially those in which the intracervical tube cannot be well placed.

SUMMARY

1. The incidence of carcinoma of the cervical stump is discussed.
2. Total hysterectomy is the operation of choice of benign lesions of the uterus when feasible.
3. Careful evaluation of the cervix by all diagnostic methods.
4. Malignant disease arising in the remaining cervical stump is almost always preventable. Complete removal of the uterus is usually feasible. It is inevitable that a certain per cent of cervical stump carcinomas will occur so long as the sub-total hysterectomy is performed.

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7. Cohbie, W. G.: American Journal Obstetrics and Gynecology, 51: 751, 1946.

8. Schiller, W.: Lancet, 1, 1228, 1936.

MEET OUR CONTRIBUTORS

Don H. O'Donoghue, M.D. and *Marvin B. Hays, M.D.*, both of Oklahoma City, have an article on "The Patella, Basic Considerations," in this issue of the Journal. Doctor O'Donoghue was graduated from the University of Iowa College of Medicine and interned at the Iowa University Hospitals and served his residency at the University and Crippled Children's Hospitals; Oklahoma City. He has been certified by the American Board of Orthopedic Surgery and is a member of the American College of Surgeons, International College of Surgeons, American Academy of Orthopedic Surgery and the Association of Orthopedic and Fracture Surgery.

Doctor Hays was graduated from the University of Oklahoma School of Medicine in 1945 and served a general rotating internship at University Hospitals and a residency in orthopedic surgery at University Hospitals.

A. Ray Wiley, M.D., Tulsa, is the author of "Recent Advances in Surgery" in this issue. Doctor Wiley was graduated from the University of Oklahoma and served his internship and residency at Polyclinic Hospital, New York. He is a fellow of the American and International Colleges of Surgery.

W. Carl Lindstrom, M.D., Tulsa, was graduated from the University of Oklahoma School of Medicine. He is the author of "A Method of Management for the Infertile Couple." Doctor Lindstrom, who is a member of the American College of Surgeons, interned at Evanston Hospital, Evanston, Ill. He served 56 months in the army and was a Lt. Col. when released from service.

Gerald Rogers, M.D., Oklahoma City, has an article on "Carcinoma of the Cervical Stump—A Plea for Early Diagnosis and Prevention" in this Journal. Doctor Rogers was graduated from the University of Oklahoma School of Medicine and served his internships and residency in Chicago and Detroit. He is a member of the American College of Surgeons and has been certified by the American Board of Obstetrics and Gynecologists. He servey in the navy in World War II.

A METHOD OF MANAGEMENT FOR THE INFERTILE COUPLE*

W. CARL LINDSTROM, M.D.

TULSA, OKLAHOMA

It is unfortunate that as much progress in general have stimulated interest in the infertile couple. As a result considerable progress has been made in aiding these unfortunate people. The work of Dr. I. Rubin of New York has been most stimulating in this field.

It is unfortunate that as much progress has not been made in the work with the male as with the female partner. Unfortunate because much must be learned of infertility in the male also if a great number of these couples are to be helped. Only recently has emphasis been placed on the study of both partners. Wives have had extensive study, and at times even surgery to correct infertility and the status of the husband has never been questioned. A basic requirement for conception, an adequate sperm supply, is ignored in spite of many articles and discussions pointing out the necessity for study also of the male. It has been my belief that the laity is becoming cognizant of this necessity more rapidly than is the profession.

Any program for investigation and management of this problem must be based on the knowledge of the requirements for, and the control of conception. The basic requirements are an adequate sperm supply, normal pelvic viscera with patent oviducts, and an ovum capable of being fertilized. If these requirements are met, the majority of couples will achieve pregnancy. There are certain factors not well understood that prevent conception which will be mentioned later.

When the patient presents herself with the primary complaint of infertility, adequate history as to general health, menses, and surgery is obtained and a complete physical examination is made. If there are no obvious physical causes for her inability to conceive, the patient is given a brief outline as to the procedure to be followed. It is explained that she must devote 12 to 18 months to the problem before she can reasonably expect results. If the patient has not had at least one year of exposure to pregnancy, she is advised about the period of fertility, frequency of sexual activity, and is in general reassured. If, after one year, she has not conceived, the investigation to be outlined is instituted. If the patient is in the latter half of her child bearing period, six months exposure to pregnancy may be considered adequate before instituting the investigation as to possible cause for her infertility. To begin the fertility "workup" the patient must have her husband investigated before any further work is to be done with her.

The investigation of the husband is done by a urologist. This study should consist of a general physical examination and a search for conditions that are thought to reduce fertility. Specifically, a masturbated semen specimen is obtained and examined for the following: volume, viscosity, sperm count per cubic centimenter, percentage of abnormal and dead sperm and motility. Normal figures generally accepted are volume three —five cc, low viscosity after five—10 minutes, 1000,000,000 sperm per cc, with 10 per cent or less abnormal or dead sperm and remain motile approximately four hours without special care except to prevent drying. The generally accepted lower limit of fertility is 60,000,000 sperm per cc or a total number of 180,000,000 sperm per ejaculate. A masturbated specimen is necessary. Condom samples or samples obtained from the vagina post coitus are misleading and unreliable. A single specimen, if in the lower limits of fertility, must not be accepted. More specimens must be examined, especially following rest from sexual activity, before his status can be ascertained. We have observed considerable variation in sperm production in a given male.

If the male is sub-fertile, the basal metabolic rate is determined, and, if low, he is placed on an adequate dose of thyroid

*Presented at the Annual Meeting of the Oklahoma State Medical Association May 21, 1952.

extract. Thyroid extract when needed is very effective. No other therapy used has resulted in improvement of male fertility. One of the urologists with whom I work on this problem uses large doses of androgen for several months to suppress spermatogenesis. A temporary increase in sperm count occurs when androgen is withdrawn. Our experience with this procedure is too meager to evaluate it. The only treatment we have used in the male with sustained improvement in the sperm count is thyroid extract in those individuals with a mild to moderately severe hypothyroidism.

In the male with azospermia a testicular biopsy may be done to be positive that germinal epithelium is deficient. Permanent occlusion of the spermatic ducts is not common. In our experience azospermia has been associated with atrophy of the geminal epithelium.

The investigation of the female partner is to determine the normalcy of the pelvic viscera and the patency of the fallopian tubes. In addition to the bimanual examination, a hystosalpingogram is done. This, in our opinion, is more desirable than the Rubin test, because the uterine cavity is also well visualized. Unsuspected anomalies may be found which obviate the probability of pregnancy. In addition, the tubes are visualized and their patency or occlusion determined, and, of considerable importance in treatment, the location of the occlusion if present. The discovery by hystosalpingogram of an infantile uterus is quite infrequent. Many patients seen for infertility have been told that they could not become pregnant because they have an infantile uterus. Bimanual examination in this group of patients reveals apparently small uteri but the x-ray generally shows a perfectly normal uterus. Actually, I have yet to find an infantile uterus.

The technique used for the hystosalpingogram is as follows: It is done at the approximate time of ovulation. Lipiodol is the radiopaque medium used. The patient is placed in the lithotomy position on a cystoscopic table, the cervix exposed and grasped with a tenaculum. A cannula, especially made for hystosalpingography, is inserted 2 - 3cm. into the cervical canal and a seal is obtained with the rubber acorn on the cannula tip. The oil is injected slowly with little pressure with an ordinary 10 cc syringe. Four to six cc of oil is adequate to fill the uterus and tubes and allow for spill from the fimbriated end. The smallest volume of oil possible is used lest granulomata form about the oil droplets. Low pressure is of importance to avoid complications. Spasm is also reduced by low pressure injection. This procedure is done without sedation or analgesia of any type. One film is taken immediately following injection of the oil, a second film approximately five minutes later. In approximately 10 per cent of the cases the second film will show spill from the fimbriated end of the tubes. A 12 hour film is taken to confirm the findings of the first two films.

The next problem is to determine that the female partner is ovulating and the approximate time of ovulation. The simplest method is the use of the basal temperature chart. The patient is instructed in obtaining the temperature and properly recording it. A feature of the temperature determination which is felt to be necessary for accurate interpretation is that all temperatures be taken by rectum for a definite time by the clock, usually three minutes, but always the same time each morning. The interpretation of the chart is not always simple. A diphastic curve indicates ovulation but time of ovulation is not always definite in some patients. In these patients, endometrial biopsies or vaginal smears may be indicated.

Both endometrial biopsies and vaginal smears are office procedures. Endometrial biopsies taken early on the first day of menstruation and showing secretory endometrium is evidence that ovulation has taken place. The vaginal smears may be used to determine the date of ovulation. Daily smears are taken beginning on the eighth day of the menstrual cycle until the cells show the changes typical of progestin activity. These changes occur shortly after the ovary begins its production of progestin thus indicating that ovulation has occurred within the 24 hours preceding this change. Ordinarily five to six smears are all that are needed. These latter procedures are seldom necessary, however, as one becomes more familiar with the basal temperature chart.

It has been our experience that the temperature changes are a result of the glandular changes taking place and there is a definite lag between the glandular changes and temperature change. It has been determined by successful inseminations that the ovulation probably occurs about 24 hours prior to the temperature rise on the chart and usually coincides with the temperature drop prior to the marked rise that has been

described as the indication that ovulation occurred on that date. The patient is requested to keep basal temperature charts for two consecutive cycles before they are studied for time of ovulation.

Assuming adequate sperm, patent tubes and normal pelvic viscera, and the wife is ovulating, the couple is advised about the timing of intercourse in relation to ovulation. The female partner must also be instructed to remain in bed quietly for 10 to 15 minutes, preferably for the remainder of the night without a douche. This latter caution may seem to be unnecessary but I have found several of my fertility problems rushing to douche immediately after intercourse because she is "so uncomfortable and doesn't like to be unclean" or something. Couples who are in this group are infertile because of ignorance and surprisingly constitute a fair proportion of patients seeking aid to conceive. Unfortunately, all are not in this situation.

If the problem is in the male with a low fertility rating the instructions are varied slightly. The couple is asked not to have intercourse from the beginning of the menses until the expected date of ovulation and then to have intercourse two times in 12 hours. Usually the night of the ovulation and the following morning. Each time keeping the penis in the vagina until completely flaccid to maintain the sperm in the vagina as long as possible without leakage. The wife is instructed particularly to remain quietly in bed for a minimum of 15 minutes. If no pregnancy results in four to six months with this schedule, insemination using the husband's sperm should be tried.

The experience with husband's sperm insemination is not good although pregnancies do result from this procedure. The technique is simple. A mastubated semen specimen is obtained, allowed to liquify, and injected in the cervical canal with a cannula. A small amount may be injected above the internal os but this usually results in uterine spasm and there is some danger of pelvic infection. The excess semen flowing back from the cervix is caught in the posterior blade of the speculum and the cervix submerged in the semen for five minutes. Mechanical devices such as diaphragms to keep the semen in the vagina have been used but thus far have contributed nothing.

The women with occluded oviducts constitute the largest single group. The location of the occlusion is of great importance. Those closed at the corneal end are least likely to respond to treatment. Those closed at the fimbriated end are most likely to respond.

Many forms of treatment have been used with varying degrees of success. The least successful in all hands is surgery. The best results reported in any hands is 15 per cent. Thus far, the few I have attempted to correct surgically, and all have been incidental to surgery for other indications, have been total failures.

A common method of treatment for tubal occlusion is that devised by Rubin—repeated controlled tubal insufflation. In his hands this has been quite effective. Our results have been much less satisfactory.

The procedure of hystosalpingography has considerable therapeutic value. The high viscosity of the lipiodal is believed to be an important contributing factor. This is particularly true in the secondary sterility group, the so-called "one baby sterility." Too many patients who have tried unsuccessfully to achieve pregnancy for several years, will conceive a short time following this procedure for it to be coincidental. Several patients have failed to menstruate following hystosalpingography and delivered normal children nine months later.

Another method of treatment for tubal occlusion which I feel has great merit is intravaginal heat therapy. By increasing the pelvic circulation with heat many pathological conditions of the tubes will improve sufficiently to allow conception. This is especially true of occlusion. It has been our experience that more is accomplished by intravaginal heat than by electrically induced heat.

The most difficult and discouraging results are obtained with the anovulatory patients, as with the male who has poor spermatogenesis.

If the patient has hypothyroidism to some extent, she may be made to ovulate regularly with thyroid extract. In fact, even those who have normal metabolic rates will improve their basal temperature curve and conceive following small doses of thyroid.

Theoretically, anterior pituitary extracts will induce ovulation. Unfortunately, there are no extracts available that will produce ovulation in the human. Estrogen in the

estrogen deficient patient would be of value though it is difficult to determine estrogen deficiency in the young woman and administration of estrogen has a depressing effect on the pituitary. The same can be said of progesterone.

Chorionic gonadotropin will only produce increased lutein phases of the cycle as has been repeatedly demonstrated. One report I have seen, however, has mentioned that administration of chorionic gonadotropin for five days, doses of 500 units daily, beginning with the 10th day of the cycle has produced pregnancies, in otherwise anovulatory patients, the month following therapy too frequently to be coincidental. We have had too little experience in this to comment.

In general, all investigators in this field believe that thyroid is the only hormone of value in the treatment of anovulatory cycles in the human. However, one still sees patients who have been taking "shots" for a year or more in an attempt to achieve pregnancy. On the basis of the results of those who have extensive experience with these problems it is difficult to understand why we continue to hear reports from patients of such treatment.

I do wish to mention something that I am sure many have experienced. In treating young women for endometriosis with doses of stilbesterol that should suppress ovulation, pregnancy occasionally occurs during the course of such treatment. No rational explanation comes to my mind. Though we have been tempted to try it in some of the more resistant cases, we have not yet done so.

There are at least two other factors in infertility which must be mentioned. I know of no solution nor a sure way to recognize their existence. The first is incompatibility between the ovum and sperm of a given couple. These people are in every way we can determine fertile but they do not have children. Proof that such does exist is that the same couple with different partners will reproduce. The second is the psychological influence in fertility. What part this plays is at the moment impossible to evaluate but it does definitely play a part. The old familiar sterility, adoption, then pregnancy, is well known and must be in large part psychological. Also the couple who finally gives up trying to achive pregnancy then can't seem to stop having children, is also familiar. There is increasing evidence that there is some influence exerted on the pituitary by the hypothalmus to give a definite basis for some psychic control over this problem.

We have tried to outline without too much detail a plan for management for the infertile couple, on the basis of known and generally accepted principles. This is the method we use in practice. The proof of the pudding, so to speak, is in the results and we would like to give you a few figures from our experience with this procedure as outlined.

For the years 1949-1951, inclusive, we saw 111 patients with the primary complaint of inability to conceive. Of this group 17 were seen only once and no follow-up was thus possible. Of the remaining 94, 45 became pregnant. This represents 47.8 per cent of the total and 37 living children. Twelve are due to deliver in the near future, and five patients were pregnant and moved away and no further information about them is available.

There was one child with an imperforate anus who has been successfully treated. No other abnormalities resulted.

Twenty-four patients or 25.5 per cent had some type of tubal occlusion. Twenty-five husbands or 26.6 per cent were sub-fertile or worse.

In summary, we wish to re-emphasize that fertility studies must include both husband and wife. Progress has been made in the past few years to aid these people, but more knowledge of the problem of the infertile male and the anovulating woman must be forthcoming before greater success can be expected.

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THE PATELLA --- BASIC CONSIDERATIONS

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The number of articles written, or discussions held on a certain subject, is usually determined by two factors; first, the general importance of the problem itself, and second, the lack of a wholly satisfactory or generally acceptable solution to that problem. Pathology of the patella is of such interest, and is, as yet, not wholly solved, although many steps have been taken toward its solution in the past 10 years.

Pathology of the patella should be treated only after due consideration of the basic physiological and morphological factors involved. It is the purpose of this discussion to correlate some of this basic information concerning the patella. Proper treatment of each individual case must be kept as a separate problem and certain basic factors will help the surgeon to reach the logical solution in a given situation.

The patella is classified anatomically as a true bone. There is, however, considerable evidence that it is nothing more than a glorified sessamoid. This question of classification may make for interesting discussion but is largely academic in consideration of the role of the patella in the function of the knee joint.

The infant patella consists of a cartilaginous center only. Ossification begins at about two or three years of age and is complete in the 17th or 18th year. The adult patella fits as a disc of bone on the posterior surface of the quadriceps tendon. It measures approximately five centimeters in diameter. The posterior surface is covered by a layer of hyaline cartilage about seven millimeters thick as compared with three millimeters for the femur and four millimeters for the tibia. This cartilaginous face of the patella is divided into two major parts in conformation to the two sides of the femoral furrow through which it rides. It is sub-divided into seven distinct faces; three pairs being shaped to correspond to the three major positions of the patella as it glides over the femoral condyles during flexion and extension. (Figs. 1 and 2) This shaping of the articular face apparently has developed in response to demand. Should it appear desirable to replace a defective patella with an artificial one, it would be reasonable to expect such a prosthesis to conform to use a material for this prosthesis which has some degree of elasticity, such as nylon, in order to minimize trauma to the femoral articular surfaces. None such is as yet available.

Animal studies have established certain interesting factors which are of practical value when applied to the human. Slow moving species of mammals tend to have large patellae, while the more active species have small or absent patellae. This characteristic is true of the species but does not vary with individuals within the species. For example, a kangaroo has a massive quadriceps with no trace of patella; the two-toed sloth is noted for his sluggish movement and has a very large patella. It does not follow that removal of the patella would speed up the activities of the sloth or make him a more active and efficient creature. By the same token, removal of the patella from a normal knee could not be expected to improve the efficiency of the knee. One should not seriously consider advocating removal of a normal patella, although certain well qualified writers have suggested that improved function might be the result.

Experimental investigation of the patellar function in the knee has offered considerable information, some of which appears to be misleading and much of which is conflicting. As is usually the case, clinical investigation has of necessity lagged behind in some of its concepts, since it is difficult to prepare alternate series of cases reproducing the same conditions. Recently, however, various reports of clinical material have added much to the sum of our knowledge as to the function of the patella and the residual function of the knee following its removal. Although correlation of laboratory and clinical results is, at present, insufficient, there have been sufficient reports by capable observers to indicate that clinical and laboratory results are not always parallel, and that what may appear to be ideal as a result of work on laboratory animals and on cadavers and anatomical specimens may not necessarily be directly applicable to the human being.

The mechanical role of the patella has remained obscure and controversial. All agree that it serves as a protector of the

femur, and indirectly the tibia and quadriceps tendon. Examination of the knee of a person who kneels a great deal, will reveal callouses over the anterior tibial tubercle and often over the inferior margin of the patella. Additional evidence of this weight bearing function is the occurrence of prepatellar bursitis in the scrub woman or the miner. After patellectomy, some patients may develop tenderness over the patellar tubercle of the tibia, indicating an increase of weight bearing in this area because of the lack of the patella. These observations would seem to indicate that the patella and the patellar tubercle of the tibia share the load in many kneeling positions. That the patella serves as a bumper and protector of the femoral condyles is an experience common and painful to us all. Moreover, it is much better suited to receive direct blows than is the articular face of the femoral condyles. It may serve as a protector to the quadriceps tendon in its gliding across the femoral surface and, in fact, may originate in demand to this need for protection.

In the extensor mechanism of the knee, the patella has variously been described as a pulley, a gear-box, or a lever. Actually, it seems to share certain similarities to several mechanical principles. Normally, the smooth cartilaginous surfaces shift the direction of force at an angle with a little loss of power. When there is interference with this gliding ability, by roughness or irregularity of the under surface of the patella, power is lost but as the degree of extension at the knee approaches 180°, this loss of power actually increases at a greater rate with a roughened patella than a normal one, although it would seem that there is distinctly less pressure of rough surfaces as the extended position is reached. Recent clinical work by the authors has shown that there is uniformly more loss of strength following patellectomy as extension is reached. The patella is most missed at 180°, where its leverage factor would seem to be the least. Pain, rather than strength, is the important factor in the calacic knee. This pain is much more severe in the flexed position as the rough surfaces as forcibly pressed together and rubbed across the other and is often completely relieved by patellectomy.

The lever action of the patella is only part of the general lever mechanism of the entire knee joint. There is in effect in the knee, a double "Jack-spar" leverage action. This mechanism exists due to the location of the axis of rotation of the knee joint posterior to the longitudinal axis of the shafts of the tibia and femur, thus, in effect creating an eccentric motion and permitting the leverage action previously mentioned. There are two major "spars" evident. The first reaches from the femoral rotation axis of the knee to the patella; and the second, from the same femoral axis to the tibial tubercle. (Fig. 3)

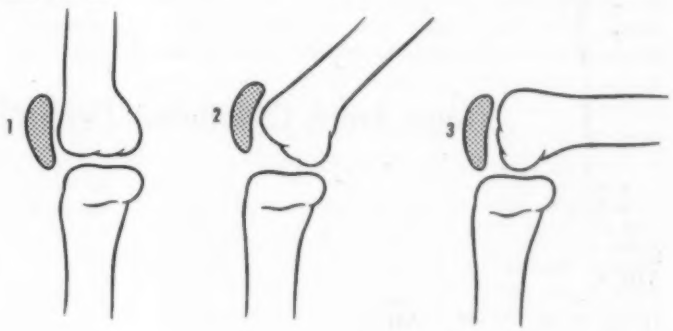
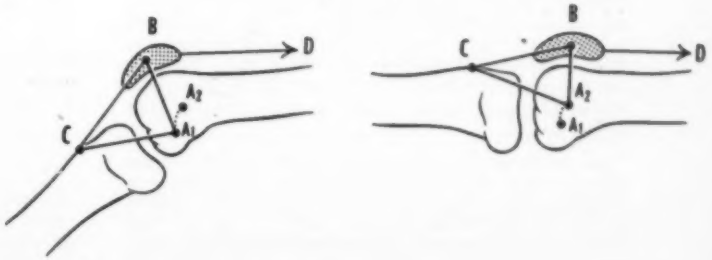


FIGURE 1. Showing divisions of the articular face of the patella; the numbers 1, 2, and 3 indicate the portion in contact with the femur at the positions as shown in figure 2.

FIGURE 2. Showing the contact of various portions of the patella with the femur at 180°, 135°, and 90°.

FIGURE 3. As the knee is extended A_1B loses its advantage and is replaced by A_2C. (A_1B is the primary spar. A_2C is the secondary spar, BC represents the tibial-femoral force line, BD represents the quadriceps force line.)



It should be noted that the femoral axis shifts anteriorly as the knee is extended. The shift of leverage from the first to the second spar allows maintenance of the mechanical advantage throughout extension. The patella serves as the anterior end of the primary spar and is responsible for about 35 per cent of its length at 90° flexion, but for only about 15 per cent of its length at 135° flexion. This advantage is offset by two factors: one, as extension increases past 135°, the patellar spar decreases in its function and is essentially zero when complete extension is reached; second, with removal of the patella, the angle of force is more obtuse with increased mechanical advantage.

DISCUSSION

In the athlete, the manual worker and the person exposed to the trauma of falling on the knee, the patella is an important protector of the knee joint. Preservation of this function may enable the individual to continue the work best suited to his abilities. It it is necessary to sacrifice the patella in such an individual, it might be advisable to consider its replacement by a suitable prosthesis provided that certain criteria can be met in regard to elasticity, lack of reaction in tissue and so forth. It would seem that these criteria have not been adequately met by any replacement yet available for the patella. Although the patella normally aids in extension by virtue of its gliding ability, when its articular surface is roughened or scarred it becomes a liability and greatly hinders the transmission of force at the knee joint. The fact that the so-called lever mechanism of the patella would seem to be most important in the flexed position, would appear to indicate that this should be the position where the greatest weakness should be felt following its removal. This has been proved by clinical investigation to be not the case, indicating that the lever mechanism of the patella is not essential to good strong and active utilization of the quadriceps muscle. This may well be the result of the tremendous reserve power in the quadriceps muscle. Excision of the patella does not greatly diminish the functional strength of the knee. Loss of strength following patellectomy is due primarily to physiological defects rather than mechanical defects. Rehabilitation demands judicious surgery, a proper mental attitude on the part of both the patient and surgeon, and suitable physical therapy.

SUMMARY

1. The normal patella is an important part of the knee joint and should not be sacrificed as a matter of convenience to the surgeon.

2. The abnormal patella is a liability and should be removed if normal or near normal gliding surfaces cannot be obtained.

There is as yet no available prosthesis adequately replacing the patella and suitable for general use.

4. The mechanical role of the patella in extension of the knee joint is of little importance when a patellectomy is indicated for other reasons.

One need for fear a critical diminution in strength of the quadriceps function following removal of the patella.

News From Oklahoma Defense Blood Center

J. R. B. BRANCH, M.D., DIRECTOR

Regardless of what happens in Korea or has happened since this was written, the need for blood for the Armed Forces will continue for months to come. The Oklahoma Defense Blood Center so far has been meeting its share of this, and averaged from Nov. 1 through April a little over 4,000 pints a month. The total as of April 30 was 24,098. Of this, 7,254 pints were collected in Oklahoma County, and 16,844 pints in the 36 participating chapters throughout the state. Seventy operations in Oklahoma County, and 131 in the other 36 chapters, were conducted. The largest amounts of blood taken in one day were at Claremore on April 15, 313 pints, and Pryor on April 16, 304 pints, when we set up both mobile units.

As mentioned in a previous report, a part of this goes as whole blood direct to Korea. The balance is processed into plasma, and distributed whenever needed by the Armed Forces. We are proud of the fact that though the Oklahoma Defense Blood Center is the youngest in the Midwestern Area, it ranks third of the 15 in the amount of blood sent to Korea. This has been made possible through the support of the general public and the enthusiastic work of the large number of Red Cross Volunteers in recruiting donors and assisting at the operations. We are also grateful for the great assistance we have had from the medical profession.

County Medical Societies have already appointed Medical Advisory Committees to work with the local Red Cross Chapters. Not only have they backed the Blood Program in general, but have actively participated in recruiting donors and giving medical coverage during operations of our mobile units. Local nurses and laboratory technicians have likewise responded and given invaluable help.

In addition to carrying on our regular day in and day out work, we have been asked to train nurses for other centers, an honor never before given to a center so young.

RECENT ADVANCES IN SURGERY

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Whether a recent development is new or not is relative. To appreciate recent advances one must know the trends in surgery and what has led up to any new advance. These trends are not only interesting but they often point the way so that one can, in a measure, anticipate future developments.

As a group the neuro-surgeons are always finding new techniques and improving old techniques. This is to their credit. Arteriograms were being made 25 years ago, but have only recently come into their own. The localization of cerebral lesions, tumors, aneurysms, thrombosis, and ruptured vessels are difficult problems. The risk of air injections and the subsequent prolonged distress in many cases discouraged this method, although it's use was a definite advance when it was introduced. Arteriograms are particularly useful in vascular lesions. With the use of the Sanchez-Perez rapid x-ray cassette changer, many more of these lesions can now be identified, especially basalar aneurysm. (Courville report findings .3 per cent basal aneurism in 30 thousand autopsies.)

Another step in improving localization is the use of fluorescein. By injecting five c.c. of a 20 per cent solution of sodium fluorescein at the beginning of the operation, a neoplasm can be better outlined. Fluorescein has an affinity for neoplastic tissue. A source of ultra violet light and a Wood's filter is necessary. As a further step in localization, but still in the research field, is to tag the sodium fluorescein with radio active iodine and checking it with a counter. Positron emmiting isotopes are also being used. All of this broadens the field of neurosurgery.

We are all acquainted with the work of Freeman in introducing the lobotomy and the work of Moniz with leukotomy. These techniques were later improved by topectomies and thalamotomies. In certain cases where shock therapy fails or is not indicated, often lobotomy can be extremely useful. These operations have been a big boon in relieving some of the cases of compulsion neurosis, some maniac depressive and also in some cases of intractable pain. Now with the new stereotaxic instrument devised by Horsley and Clark for animal experimentation only, and later one by Hayne and Stowell, the first one used on man, small lesions in the thalamus can be directly attacked and accurate lobotomies can be done with a minimum of danger.

The field of peripheral neurosurgery, particularly of the sympathetics, is not new but is now opening up into broader fields. Although, for years we have used sympathectomies for the relief of certain types of hypertension, for vascular dilatation and the relief of pain in certain conditions, the new view is not only these uses, but using them to control or modify the physiology of certain organs by attack of their sympathetic. The blocking of the sympathetics in acute pancreatitis is just one example.

In thyroid surgery the whole picture has been changed by the introduction of antithyroid drugs and by the use of radio active iodine. Out of this has grown a better knowledge of the management of these in connection with surgery. Hyperthyroidism, either the diffuse toxic type or the nodular toxic type are considered here. The patient with diffuse toxic thyroid under the age of 50 years will usually respond to the use of propylthyurourcil. If this is not effective or can not be tolerated radio active iodine should be the next step. The ultimate matter of surgery in these cases must rest on the judgment of the surgeon as to the response of these drugs and prognosis of the treatment.

Most surgeons feel that surgery is preferable, especially in the patient under 50. Our attitude of the nodular toxic type is more emphatic. These cases are all candidates for surgery as soon as they can be "cooled" either with antithyroid drugs or radio active iodine. This later is, as a rule, not so effective in the nodular type. The nodular goiter usually occur in the older age group of pa-

tient, complicated by other conditions or diseases. They are more difficult to deal with. No fast and dogmatic rule can be applied to any group of thyroid patients. Thyroid adenomas and Hashamoto's disease calls for thyroidectomy, regardless of B.M.R. present. We no longer shell out the adenoma for too often it is multiple and there is the possibility of leaving a potential source of cancer.

In cardio-vascular surgery, the efforts of the earlier investigators of the past decade have been crowned by successful corrective and curative procedures in the application of their ideas in the human. The exact anatomico-pathologic diagnosis is no longer one of purely academic importance, since during the last decade, hundreds of patients with cardiac and great vessel lesions have been successfully operated and restored to normal health or greatly improved. Essentially these patients can be divided into two groups, those with cyanosis and those without cyanosis. The acyanotic group is composed of those with patent ductus arteriosis, coarctation of the aorta, congenital vascular rings, and a few other less common conditions. The cyanotic group consists chiefly of those lesions associated with stenosis of the pulmonary artery. The first ligation of a patent ductus arteriosis was done by Gross in 1939. Hundreds have been operated since then and many cardiac cripples have been rehabilitated. The patent ductus can be dealt with in two ways. It can be tied, in continuity with two sutures with a transfixing suture in between, (Blalock). It can be clamped, divided and each end sutured individually. (Gross). Simple tying of the duct carries about 10 per cent reoccurence; tying and transfixing suturing about four per cent reoccurence. The optimal age period to operate the patent ductus, patient is between the age of six and 16 years. Rarely ever should they be operated before first year of life. The ductus may close in this period. In tetrology better at six to seven years of age. Earlier if necessary.

There are two types of coarctation of the aorta, the infantile and the adult. There are three common methods of treating this condition. Either an anastomosis of the subclavian artery to the distal aorta, with or without resection of the coarctated area; resection of the coarctated area and an end to end anastomosis, or resection of the coarctated area and replacement of the defect with an arterial graft. In many respects, the most distressing type of congenital heart diseases are those associated with cyanosis. Probably the largest single group of these anomolies is the so called "Tetrology of Fallot." The four features which constitute the tetrology are pulmonary stenosis, dextra position of the aorta, a defect of the ventricular septum, and a right ventricular hypertrophy. The only improvement surgical intenvention can offer is to increase the flow of blood thru the pulmonary artery. This can be either by anastomosing the pulmonary artery to one of the peripherial systemic vessels, such as the subclavian or innominate artery, or by anastomosing the pulmonary directly to the decending aorta. In this way systemic arterial blood, which is desaturated, is made to flow to the pulmonary tree and be reoxygenated.

The most common operative intracardiac procedure done today is commissurotomy. It consists of dividing the scarred cardiac valves along their normal fissure lines. This may be accomplished by insertion of the operator finger thru the scarred "fish-mouth" mitral valve and fracturing the calcified valves, or by division of the scarred valve by use of a special commissurotomy knife that fits onto the finger. In the experimental animal work it is possible to by-pass the heart with a mechnical heart or to use a double transfusion connection with another animal. This allows longer time and more accurate intracardiac surgery. It may open up another field of cardiac surgery.

In abdominal surgery our first thought is apt to turn to vagotomies. Any discussion of recent advance of surgery should include some discussion of vagotomy. While the cutting of the vagus nerves is not new, the work of Dragstedt has renewed considerable interest and it is now finding its rightful place in the armamentarium of the surgeon. Of the scores of recent articles about vagotomies, it appears that the general feeling is that this procedure is indicated in the following situations: 1. In all patients with a marginal ulcer or anastomotic ulcer occurring in a former resection of the stomach or a former gastro-enterostomy. It should always be combined with a gastro-enterostomy, not just a vagotomy alone. 2. It is indicated in a patient with non-malignant extensive doudenal ulcer associated with extensive edema about the doudenum and adjacent organs or tissues, especially if these tissues are dangerously friable for resection and ligation. 3. In the poor risk

patient where a vagotomy and simple gastrojejunostomy would be tolerated but an extensive gastric resection would not be. The final and true evaluation of the use of the vagotomy will, probably, take some years yet. Its final effect on the liver, the pancreas, spleen and intestinal tract has not yet been fully determined. All the information I have indicates in cases of duodenal ulcer that the final end results in five years or more are better with gastric resection than in vagotomosis or a post coloic anastomosis is better. Lower in vagotomies. In general I have been better pleased with gastric resections than vagotomies. The cases that have disappointed me in gastric resection I now feel were due to too little resection of stomach tissue and subsequent marginal ulcers. In these that I have reoperated I have been doing a more extensive resection and a vagotomy. This brings up the point of amount of gastric tissue to resect. It is now generally agreed that 75 to 80 per cent of the stomach should be resected to get satisfactory permanent results in duodenal ulcers. There is still argument as to whether an antecoloic anastomsis or a post poloic anastomosis is better. My results are better with the antecolic type. It was felt that a long proximal loop should be avoided, and this is true.

To obtain a short antecolic loop the peritoneum supporting the ligament of Treitz can be severed. This mobilized the duodenal-jejunal junction and allows a shorter upswing of the loop. Then by splitting the omentum up to the transverse, gastricepiploicas, blood vessels a loop from five to seven centimeters can ordinarily be obtained. In extensive gastric resection, where little stomach tissue is left and the line of anastomosis cannot be in the mesentery, and a posterior loop is used, a double loop of the jejuneum has to be brought thru the mesentery, up to the stomach. This has caused a construction about the jejunal loops. This is one reason why an antecoloic anastomosis is preferred.

The crushing of the left phrenic nerve in association with vagal resection plus gastroenterostomy is now coming into the literature. The crushing is done at the sclenus anticus level. The phrenic crushing is done to counter-act some of the undesirable side actions of the vagotomy. Apparently this is accomplished but the number of cases to date are too small to draw any conclusions.

Biliary tract surgery has been very much in the limelight recently. It is now generally felt that the presence of gall bladder stones associated with or without jaundice was definite indication for common duct exploration. This adds about one per cent more to the mortality rate, when the duct is explored. The chance of stricture following common duct exploration cannot be overlooked, although most such strictures are caused by technical errors in tying off the cystic duct. Trauma from common duct exploration can and in the hands of the careless operator does cause stricture. A stricture always presents a problem. This is mainly due to the fact that, while most every thing has been used as a splice or substitute for the common duct no completely adequate substitute tissue or material has been found. In any repair the average time for reoccurence of the stricture is about five years. The results of all of this is to re-evaluate and revive common duct surgery. In the recent past and at present, in the hands of several operators, cholangiograms are made, AFTER the T-tube has been placed. This is contrast to the thinking that if cholangiograms could be made before any dissection and manipulation were done that scattered stones could be better localized. With this thought in mind intravenous injections of 20 per cent solution of sodium fluorescein has been made just before surgery. When the abdomen is opened and the entire biliary tract is visualized, even some intra-hepatic stones located. Those using this have very favorably reported on it. I have not used it. The difficulty in its use is that it requires a darkened operating room, a source of ultra violet light and a Wood's filter. Repeated looks are time consuming. I use the technique of injecting diodrast or lipiodal into the common duct as soon as the fundus is brought into view. Diodrast is somewhat less irritating than lipiodal. The common duct is aspirated anl filled with the diodrast. If the cystic duct is open the gall bladder biliary tract fills. An x-ray tunnel cassett is placed under thet patient before draping. A good cholangiogram is then secured andn viewed. Valuable information is thus obtained in locating stones or obstructed areas. This information can help, if for any reason it is felt that the gall bladder or a portion of it should be preserved to by-pass the bile to the duodenum or anywhere in the jejuneum, for example, should one find the head of the pancreas and the doudenum needed resection for a malignancy. The

transduodenal approach to the lower end of the common duct has been avoided rather scrupulously in the past, on account of creating a remaining fistula or other complication. The pendulum is now swinging back to more use of this opening. Better operative preparation and better post operative care has made this possible.

There has been some new development in surgery for portal hypertension or cirrhosis of the liver. In the past we have tried to relieve this by portal-caval shunts or by spleno-renal vein shunts. The portal-caval shunts by means of a Eck's fistula is difficult in the human. The spleno-renal shunt is frought with failure thru the difficulty of dissecting the splenic vein, especially if it runs thru the tail of the pancreas. The number of thrombosis occuring in the procedure has been discouraging. None of these procedure get at the real cause of the trouble. It has become evident that the real mechanism of portal hypertension is that the changes in the liver due to the cirrhosis produces a build up of the arterial pressure thru the sinuses of the liver, allowing the arterial pressure to produce a back pressure into the venous system. This also caused a development of the collateral arterial circulation. Berman of Indianapolis reasoned that if the arterial pressure to the liver could be reduced this would reduce the portal hypertension. He tied off the hepatic artery and the splenic artery as close to the celiac axis as possible but not the axis. In a personal communication he says, "Hepatic ligation is not as easy operation but it is definitely less hazardous than the portacaval shunt or the splenorenal shunt because it is technically easier and the chance for complication is certainly less. The collateral circulation in a cirrhotic is actually better developed insofar as the liver and the stomach and the spleen are concerned. This has been made apparent to us because recently I have been ligating not only the hepatic and the splenic arteries but also the left gastric artery. The pressure in the coronary vein is reduced after ligation of this vessel. If it were not for the collateral circulation in the stomach certainly this would not be a feasible procedure, although I am aware that this form of devascularization may be done even in the normal stomach. A preoperative determination of the collateral circulation could be made but we have not deemed it necessary or advisable. The point of election for ligation of the hepatic and the splenic arteries is as close to the celiac axis as possible but not around the celiac artery. We believe that the collateral circulation is best stimulated at a point approximately one to one and a half centimeters from the celiac artery. We have had no cases of massive liver necrosis. In our experimental work we found that the closer we came to the liver in our ligation, the greater was the possibility of hepatic necrosis. I am sure, however, that occasionally a case of hepatic necrosis will occur, even though the ligations are made at the point of election. At present I am convinced that ligation of the hepatic, the splenic and the left gastric arteries offers more for the advanced cases of portal cirrhosis with bleeding varces and ascites than any other procedure with which I am familiar." (J. K. Berman).

Acute cholecystitis can present some serious diagnostic and operative problems. It is generally agreed now that all acute cholecystis cases should be operated as soon as fluid balance and blood needs are corrected. A paravertebral novocain block can be very comforting to the patient but must not lead one into a sense of security that is false. The operation of choice is cholecystectomy. But one must remember that the ligation of the cystic duct and particularly the cystic artery must be made on live, viable tissues that will withstand ligation. In about 20 per cent of acute cholecystitis patients, drainage only can be made. It is better to operate them within the first 18 hours of onset, if possible. However any delay is hazardous. Acute pancreatitis produces an acute abdomen but is no longer an indication for opening the abdomen. If a mistake has been made and the abdomen is opened and a diagnosis of acute pancreatitis is made and you are accustomed to doing vagotomies, this may be made but nothing else at that time. Of course the tip off before surgery is an elevated serum amylase. This occurs early and usually disappears in a matter of hours or a day or so. Also, there can be an elevation of serum amylase in acute cholecystitis. The treatment of choice in acute pancreatitis is paravertebral or sympathetic block. The right side should be blocked first. This is more apt to relax the major pancreatic ducts. If this does not sufficiently relieve the patient and no serious shock has occurred, then the left side is blocked. Demoral and atrophine are used. Morphine can cause a spasm of the sphincter of Oddi and should not be used. If these methods do not relieve

the pain then a spinal-block anesthesia should be used, either using the continuous or intermittent technique. In 1945 Kernitz isolated a crystallin protein from soybean meal that was active in the inhabition of the proleotytic action of trypsin. It was given the name of S.B.I. Since there is increased proteolytic activity of serum in acute hemorrhage pancreatitis Rush and Clifton (Yale University) have used this (S.B.I.) in experimental acute pancreatitis produced in dogs. It inhabited the tryptic proteolytic action and raised the antiproteolytic titer of the dog's serum. It also acted as a powerful blood anticoagulant. It seems possible that some form of this product may be made available in the therapy of acute pancreatitis.

In cancer surgery there is more and more a tendency for the surgeon to do wider excision. It is true that mutilating operations should be avoided if possible but it has become apparent that in many cases only wide incision can be of value and that cancer surgery is no place for compromise and that it is no place for the timid surgeon. We used to think that the Weirtheim operation was extensive. Now observe the work of Meigs, Brunswick, Pack, Wangenstein and many others. Brunswick reported last fall on 100 cases in which he had removed all the pelvic viscera, including the colon, the rectum, the bladder and vagina and in some cases the vulva. They had received all possible irradiation therapy and were considered hopeless patients. He has 17 survivals, four being four year survivals. Such operations as removal of all of the stomach, all the pancreas, all the doudenum, the transverse colon en bloc are being reported. The removal of the os innominate with the lower extremity for cancer of the femur should be placed in this class. Such procedure shows the trends in cancer surgery at this time. I am very much interested in what Dr. Harrell Dodson is doing. That is, in total gastrectomies, he is transplanting the cecum into the position of the stomach to substitute for this organ. I hope that he will report on this work soon. Another interesting development is Doctor Wangensteen's idea of a "second look." Although the patient may be symptomless at the end of six months after some abdominal surgery for malignancy, he reopens at this time for a "second look." This will be interesting to follow. It may be worthwhile.

This does not cover all recent advances, but I hope gives some ideas of the many new ideas annd changes taking place. Surgery is still on the march. Someone has suggested that maybe we should put a ticker tape in our office to keep up to date, lest in the morning we would be outmoded!

Minutes Of House Of Delegates

Complete minutes of the First Session of the House of Delegates held Sunday, May 18, will appear in the August issue. Minutes of the Second Session will run in the September edition of the Journal. Physicians who did not attend the House of Delegates are especially urged to read the transactions of the House of Delegates.

Therapeutic Conference*

The University of Oklahoma School of Medicine
Presented by the Department of Pharmacology

Peripheral Vascular Diseases

EDGAR W. YOUNG, M.D. (M.C. USAF), JOHN POWERS-WOLFF, M.D.,
AND PAUL W. SMITH, PH.D.

DOCTOR SMITH: The therapeutic conference today deals with the management of certain of the more frequently encountered peripheral vascular diseases. I have asked Doctor Wolff and Doctor Young to participate in this conference because of Doctor Wolff's wide experience with peripheral vascular diseases, and because Doctor Young has for some time had a special interest in certain phases of management of such conditions. In his present position as a flight surgeon, Doctor Young is also keenly aware of the necessity of adequate peripheral circulation in the personnel who pilot modern aircraft. The condition which is most frequently encountered in general practice, and constitutes therefore one of the most serious problems for the general practitioner, is the obliterative change which comes on as a result of arteriosclerosis. Various types of management of this condition are available; physical therapy, drug therapy, or surgical procedures, each of which has merit under the proper circumstances. I am asking Doctor Wolff to start the discussion this afternoon by dealing with the management of the obstruction encountered in arteriosclerosis.

DOCTOR WOLFF: The condition to which we are referring is arteriosclerosis obliterans, which occurs in the leg, in the patient of middle age or older. We see a reduced arterial blood supply which gradually interferes with circulation until some accident causes a sudden further impairment. Trauma, cold and exposure are the principle inciting causes. The trauma may consist only of a sudden and extreme flexing of the leg, or violent or unaccustomed exercise may bring on an obstructive crisis. Since the general course of the disease is characterized by a slowing down of the blood stream in the arterial system, plaques may fragment in the artery and precipitate thrombosis; I like to use the term in these cases, "thrombosis of the leg." I should like to refer you to a very excellent monograph by Edward A. Edwards, entitled *Thrombosis in Arteriosclerosis of the Lower Extremities.* Following the occurrence of thrombosis, there is secondard spasm, and the patient comes in with a cold leg. The first thing to do of course, is to reduce the spasm in the arterial system of the leg if that is possible. For this we can use a general vasolidator, but we prefer to use localized vasodilation and I think the best way to do this initially is with paravertebral block, which inhibits vasoconstriction. Then we must prevent the extension of the thrombosis in the vascular bed. This occurs not only in the arteries, but in the arterioles, capillaries or any part of the vascular system. If we cannot reverse this occlusion fairly quickly, gangrene ensues and the leg will be lost. Therefore, after we have allayed the construction, either with a generalized vasodilator, or better with a localized blocking of the sympathetics, we use an anti-coagulant drug. Any of the anticoagulants can be used, but I prefer heparin, given intravenously every four hours in 50 mg. doses. Repository heparin given subcutaneously, can also be used, after which, in either case, dicumarol is begun for prolonged inhibition of coagulation. After the leg has become warm, indicating restoration of a fairly adequate circulation, we can discharge the patient, or a sympathectomy can be done to prevent a recurrence of spasm.

DOCTOR SMITH: Doctor Young has been dealing, for the past year or more, with a rather select group of personnel in an Air Force Base Installation. I should like for him to say something about the likelihood of

*This report represents the recording of a Therapeutic Conference held in the auditorium of the University of Oklahoma School of Medicine. These conferences are held each Monday at 4:00 P.M. and are attended by the upper classmen in the School of Medicine, interns, residents, and other physicians. Any physician is welcome to attend and participate. The conferences are conducted under the sponsorship of the Department of Pharmacology.

encountering such a condition as this among such a selected group.

DOCTOR YOUNG: Doctor Wolff mentioned that this disease is fundamentally one of middle age and over. Since in the Armed Forces we are dealing primarily with younger people, we don't see much of it. Of course some of the individuals do drift into this age group and the problem becomes one of management of the chronic arteriosclerotic. In other words, how long can a man be maintained in a condition which will allow him to do his job in military service? This has its application in civilian practice as well. If, as some have advised, a man's work must be interrupted by bed rest to prevent serious complications, there is a tremendous economic strain on that individual. Therefore, the day to day management of these cases is quite important. I should like to proceed a bit further with what Doctor Wolff has said. After you discharge the patient, you must maintain general health, as with any disease. From the short time that I have been seeing patients, I have come to believe that the obese individual, who prefers to lie down until the urge for exercise passes on, becomes a major problem because modified exercise is important. After the individual is out of bed and is no longer having pain in his legs from intermittent claudication, regulated exercise should be instituted. The patient should be encouraged not just to stand, but to walk. In many monographs dealing with peripheral vascular diseases, it is mentioned frequently that walking indoors is not as beneficial as outdoor exercise. I would not attempt an explanation of this fact. In any event, exercise will maintain what circulation they have, and that is your primary objective because none of us can hope to reverse any damage that has already been done to the arterial system. Intensive research is in progress at the present time, part of it in the Air Force Laboratory, using the ultra-centrifuge to determine the size of lipoid molecules in the blood and their possible relationship to arteriosclerosis. You may remember that a few years ago considerable emphasis was placed on cholesterol and its relationship to arteriosclerosis, but the problem was abandoned when animals were fed high cholesterol diets but did not develop arteriosclerosis. There was a tendency then to say that this could not play a part in the etiology of the disease. Now we seem to be coming back to the view that arteriosclerosis is a metabolic disease in which the mechanism which controls the size of the lipoid aggregates in the blood stream has become defective. A practical method of controlling the size of these lipoid aggregates has not yet emerged from this research, but certainly it is something to watch for in the near future. Now I should like to say a few additional words about the use of anticoagulants. Some physicians, and there is rather sharp division on this point, feel that after the acute stage is over, the administration of anticoagulants should be discontinued. Others feel that the patient should be maintained on anticoagulants. I happen to belong to the second school and believe that if the physician is sufficiently familiar with dicumarol or with repository heparin, these patients can well be maintained without danger to themselves on continued anticoagulant therapy with a good chance of preventing the occurrence of a second acute episode. There are cases, however, in which thrombosis will occur even though the intravascular clotting activity has been depressed to a point which theoretically should prevent thrombosis. This is particularly true in thrombophlebitis migrans and the thrombosis that frequently occurs with Buerger's disease, so we still do not have the answer concerning long range management. Concerning antispasmodic or vasodilator drugs; in a patient who has a well advanced case of arteriosclerosis with obliteration, you are not going to be too successful with the vasodilators, whether you use papaverine, Priscoline, Roniacol, or any of the others that have become available recently. The reason for this lack of success is that reaming out arteriosclerotic plaques is as yet a difficult procedure. However, the vasodilators are of great benefit in preventing the secondary spasm that comes on following a tramautic episode.

DOCTOR WOLFF: I feel that a discussion of this kind is certainly not complete without mention of one very important point. Almost all of these patients, when they have an arteriosclerotic thrombosis of the leg, tend to go home and get into a tub of hot water and see how much heat they can stand on the affected foot or limb. If the patient does that long enough, he will lose his foot, so we must remember that these people do not tolerate heat. We stay away from heat cradles and we avoid elevation. If we use heat, we certainly do not use it at a temperature of more than 100 or 102°F. at the most. Those of you who are now students in the Medical School will see patients of

this kind in the hospital. We get many of these in whom gangrene has already set in in the foot or extremity. The percentage of salvage of these patients is quite low. If we get the patient before gangrene has set in, we can use anticoagulants and we can open up collateral circulatory channels by abolishing the normal vascular tone that is always present in the extremities to allow maintenance of the upright position.

DOCTOR SMITH: There is one question which I should like to ask either Doctor Young or Doctor Wolff. Doctor Young mentioned the matter of controlled exercise in these cases; specifically, outside exercise. Doctor Wolff, what would you say about the relation between exercise and external weather conditions; what about letting these people get out in the cold?

DOCTOR WOLFF: They should avoid cold by all means. The patient with an arteriosclerotic extremity has to avoid becoming chilled, even with regard to his head. He must wear warm, loose, woolen socks, loose shoes, plenty of clothing; preferably several layers. Light outside exercise is probably good, but the patient must stop at the first sign of pain in the extremities. This pain response constitutes a warning that ischemia is threatening or has begun, but I certainly agree with Doctor Young that these patients should have exercise, because we don't like to make complete invalids of them.

DOCTOR YOUNG: Since I have had the opportunity of handling relatively few of these patients, I would like to get Doctor Wolff's comment on one perplexing problem. It is usually very difficult to convince a patient with obliterative arteriosclerosis of the gravity of the disease, and the exact nature of the prognosis, without putting him into such a psychological state that he decides he might just as well go home, throw up his hands, and quit. It is my impression that the patient has a far bigger job in combatting this process than the physician, and his intimate cooperation is necessary. I have so far not been able to strike that fine dividing line between helpful cooperation and extreme discouragement.

DOCTOR WOLFF: I wish I could tell you my approach. Every arteriosclerotic patient has friends or knows someone who has lost a leg, and I strike the only cheerful note that I can to these people by telling them that their disease process is somewhat like that which occurs occasionally in the heart, but I explain that they are fortunate that only their legs are affected. Each of these patients has two legs and can still live, even should they lose one, which is not inevitable with the proper care. The same process occurring in the heart, on the other hand, is likely to result fatally. Most of them feel pretty good if you present it to them in this way.

DOCTOR SMITH: Doctor Wolff, you have mentioned the importance of controlled heat as a method of establishing reflex circulation in the extremity. What is your opinion of the electric blanket as a means of keeping the extremities of these patients warm at night?

DOCTOR WOLFF: In so far as these patients with peripheral vascular occlusion are concerned, I regard the electric blanket as one of the most important and practical developments of recent years. The electric blanket has two important advantages to these people. It keeps them warm without the danger of excessive heat, and it reduces the weight born by the extremities. As a matter of fact I recommend them to my patients without reservations.

DOCTOR SMITH: Doctor Wolff, you have already mentioned the importance of establishing an improved circulation in the acute case as you first see it. I would like for you to go a little more into detail about some of the methods advocated in recent years. I would like for you to discuss reactive hyperemia, produced by occlusion of the arterial system followed by its sudden release; the oscillating bed; contrast baths; alternating positive and negative pressures, and any other physical therapeutic measures which occur to you.

DOCTOR WOLFF: Several years ago we used a machine known as the passive vascular massage machine which produced alternating suction and pressure inside a glass boot, which encased the leg. We found that the pressure of the rubber cuff, which closed the glass boot at the thigh, caused sufficient trauma in the occasional arteriosclerotic, that it really did more harm than good. When I visited one large clinic recently and asked about the use of this device, I found that it had been abandoned as far as arteriosclerotic thrombosis was concerned. It may possibly be of value in other conditions. We have also used contrast foot baths and feel that these are of some value. Instructions are given to the patient in typewritten form, to insure that the patient will not go home and soak his foot in excessively hot or cold water. I frequently amplify these instruc-

tions to suit a particular case. We keep copies of these instructions available at all times in the vascular clinic. Essentially, the directions are that the patient soak his extremities alternately in warm and cool water at temperatures of 100 or 102°F., followed by a period of a few seconds in water at a temperature of 70°. In the severe arteriosclerotic the upper limit of the warm bath is always 100°F. Some patients appear to be benefitted by this procedure, but I am not certain about the benefit as a general or overall method. The Buerger exercise was formerly used in these patients. It is my feeling that the Buerger exercise usually does more harm than good because holding the leg raised above the bed must certainly increase the oxygen requirements in the muscle. One thing I do tell these people is to straighten their leg out on the bed, lower it to a stool until it turns pink and then raise it again to the bed until it turns white. This exercise they can do without much exertion.

If you doubt that the typical Buerger exercise requires considerable energy, you might try holding your leg high in the air, then lowering it below the level of the bed.

DOCTOR SMITH: Doctor Young has already mentioned the limitations of vasodilator drugs in arteriosclerosis obliterans. There is one aspect of the use of vasodilators which I believe deserves special mention. It is really a very difficult procedure to determine total blood flow in either arm or leg. After the administration of a vasodilator, it is customary to evaluate the increased circulation in a limb by means of the increased surface temperature, or the warmth of the leg. This observation, however, really does not tell us whether the vasodilatation is confined to superficial vessels or is also present in the deeper tissues, including muscle, where it would undoubtedly be of greater benefit. Alcohol, a drug which we have not so far mentioned, would appear to be a case in point. There appears to be little doubt that it is capable of causing superficial vascular dilation, because of the glow or flush it produces and the actual increase in skin temperature. Its activity as a coronary vasodilator has been questioned in recent publications, however, and until further studies are made I would hesitate to make any statement with regard to its effect on the vessels of the deeper tissues of the extremity. It may serve well as a sedative or euphoric agent when administered as a hot toddy at bedtime. It is certainly true that a vasodilator which produces a fall in systemic blood pressure may defeat its own purpose by reducing the net blood flow through the narrowed vascular channels of the affected limb. In the past few years, various workers have attempted to surmount this disadvantage by injecting the drug directly into the arterial system of the extremity with reduced circulation. Doctor Wolff, would you comment on this procedure?

DOCTOR WOLFF: My experience with this method is limited, although I have used papaverine in the femoral artery as advocated by Doctor Irving Wright at Cornell, and it does seem to help a lot in an individual in an acute episode. We do use papaverine intravenously, at times, for the systemic effect of the drug. May I make one other statement at this time? Doctor Young has said that the general health of the patient must be cared for, and this is particularly true in one important regard that has not been mentioned. These patients of middle age and past will often have an anemia. Now this anemia may not show up on the laboratory report, since the blood volume may be reduced. I think we certainly should remember that blood transfusions, even though we are administering an anticoagulant, are sometimes in order. Certainly we should give these people iron if they appear to need it. I would like to ask Doctor Young how he feels about occasionally giving these people blood.

DOCTOR YOUNG: It has been said "if you should destroy all of the doctors armamentarium except blood, he wouldn't be too bad off." Certainly I have seen small blood transfusions produce amazing results in the clinical course of hospital patients. I think that you frequently have to go by "rule of thumb" in this type of anemia, since it is accompanied by a lowered blood volume. Outside of the research laboratory, blood volume studies have not been generally available. During my discussion of the maintenance of general health I neglected to mention one point. The obese patient should be reduced, if possible. But it is essential that the diet should not be so severe that the nutritional balance is disturbed, with the chance of producing just such an anemia as we have mentioned.

DOCTOR SMITH: Up to this point we have discussed mainly the importance of reestablishing circulation in the affected limb. Let us assume now that we see a patient late, after he has developed ulcers or gangrene. What do we do now, Doctor Wolff?

DOCTOR WOLFF: Of course we wish we had seen them sooner. The prognosis is quite serious once gangrene has begun in the extremity and the percentage of salvage begins to be quite a bit lower. We see some patients who lose only one or two toes or areas of skin which can be replaced by grafting, but these are in the minority and we certainly cannot expect to salvage many of these patients without following up the treatment we have mentioned, performing a sympathectomy later. I can certainly count on the fingers of one hand those cases in which we have been able to put skin on an arteriosclerotic ulcer and make it grow. Grafting of ulcers due to arteriolarosclerosis involving only the skin can usually be performed successfully.

DOCTOR SMITH: Doctor Young, would you like to comment on some of the methods of handling arteriosclerotic ulcers? Some new developments in the past few years would appear to make treatment a little less hopeless than before. I am referring now to the antibiotics, and certain local methods of treatment, such as chlorophyll and red blood cell paste.

DOCTOR YOUNG: Frankly, I would like to refer all of these questions to Doctor Wolff. The treatment of this type of gangrene is very difficult because the underlying cause is not an infection but vascular occlusion. Of course, infection does frequently supervene, particularly in the elderly patient, which we see in a hospital such as ours. When antibiotics are used for surface application, the problem of sensitization should always be kept in mind. It is preferable whenever possible to use drugs that one would not expect to use systemically on later occasions; in other words bacitracin, tyrothricin, or chlorophyll. It is going to be interesting to observe the incidence of sensitization to chlorophyll among the innumerable people who are either taking it orally or using it in almost every conceivable type of cosmetic preparation in the interest of insuring constant "social acceptability." Chlorophyll however, has one important property which we should keep in mind. Along with its moderate antibiotic action, it is capable of stimulating fibroblastic activity and will sometimes help to heal these chronic ulcers, or at least reduce the area which must be covered with a graft if that becomes necessary. I am not familiar with any other methods of local treatment which have been definitely proved to be of benefit. To return again to the drugs which are capable of producing vasodilatation upon intraarterial or intravenous injection, there are two that I would like to warn you against. One of these should not be used at all and the other should be used with extreme caution. The one that I think should not be used at all in the arteriosclerotic is Etamon, or tetraethylammonium bromide. The vasodilatation produced by Etamon is so wide spread that the blood pressure falls precipitously. Older people do not stand this drop in blood pressure well, and my personal experience would indicate that Etamon is a drug to avoid in the arteriosclerotic. The drug which I believe should be used with extreme caution is histamine. Although my personal experience is meager, one of its main effects is to produce a headache that is almost intolerable. Another of the distressing side reactions of histamine is the tremendous rise in the level of gastric acidity which it produces. Certainly in the patient with peptic ulcer or gastritis this stimulation of acid secretion is to be avoided. Among the other drugs mentioned, Priscoline has the advantage that it can be administered orally, intravenously, or intramuscularly.

DOCTOR SMITH: We should all bear in mind that we have been talking about arteriosclerosis obliterans, and our statements apply specifically to that condition. The treatment of ulceration of this type where a deficiency of the blood supply is the basis for the original ulceration, is quite different from the treatment of other types of cutaneous ulceration.

We have not mentioned, and we will not have time to discuss, the complications which are present when arteriosclerosis accompanies diabetes. I would like for us to go on now to one of the other frequently encountered peripheral vascular diseases, thromboangitis obliterans. I am asking Doctor Wolff to start our discussion of this type of peripheral vascular disturbance.

DOCTOR WOLFF: Thromboangitis obliterans occurs almost exclusively in the young adult male. Cases have been reported in the female, but these have been so rare that there is reason to doubt the disease is actually thromboangitis obliterans. This disease involves the smaller arteries, usually in the lower extremities. In about 20 per cent of cases the upper extremities are involved, and in rare instances the arteries of the heart, brain, or other regions of the body may be affected. There seems to be a close association between the incidence of the disease and the use of tobacco. Others have reported

cases in non-users of tobacco, but I personally have never seen the disease in a person who has not used tobacco for many years, usually beginning while quite young. It can be stated, as a generalization, that there is an excellent chance of going into remission if tobacco is discontinued, but it seems almost impossible to convince some patients of this fact. If the patient quits tobacco and still has an inadequate circulation, we must resort to the usual methods of therapy in an attempt to improve it. The passive vascular massage apparatus can be used in these cases because the damage does not appear to extend above the knees, and there is not the same likelihood of vascular injury as in arteriosclerosis. We can accomplish the same results by using alternate warm and cool soaks accompanied by modified Buerger's exercise. These patients have to be most careful of the hygiene of the foot, since ingrown toenail or a small lesion beginning between the toes may cause the loss of the foot. There seems to be some dissention as to whether a sympathectomy is indicated in these cases. I believe that if the patient quits tobacco and still has a cool foot, then a sympathectomy is indicated. We still have much to learn about this disease.

DOCTOR SMITH: Although there may still be grounds for argument as to the responsibility of tobacco as the actual cause of thromboangitis obliterans, all authorities agree that its use must be stopped once the disease is established. This prohibition still applies after sympathectomy. Nicotine causes vasoconstriction by stimulation of sympathetic ganglia, and since sympathectomy leaves the ganglia and the postganglionic nerve supply intact, the drug is just as effective after the operation as before. Doctor Young, do you have any comments?

DOCTOR YOUNG: I have nothing to add to the discussion, but I would like to ask Doctor Wolff a question. How do you decide which cases are candidates for sympathectomy? Are there other indications aside from the apparent stage of the disease and the responses to paravertebral block?

DOCTOR WOLFF: If the case is seen early, and if the vascular bed of the affected parts appears to fill normally after tobacco is discontinued, sympathectomy is not recommended. If there still appears to be a vascular insufficiency, we test the response to paravertebral block, we test the response to advise sympathectomy in most cases because they feel that there is always some degree of vascular spasm present, which should be relieved. I believe that final judgment should depend upon the extent to which the disease has involved the extremity. When a patient is reluctant to quit tobacco I tell him that he is smoking up a part of his leg with each cigarette. That may seem cruel, but it is sometimes effective.

DOCTOR SMITH: Raynaud's Syndrome is a disease that affects a wide age group. Doctor Young, would you start the discussion of this condition?

DOCTOR YOUNG: My information about Raynaud's disease is confined to what I have read and heard. It is relatively rare, and is reported to occur in two age brackets, either between the ages of 30 to 40 years or in the decade from 50 to 60. There is apparently no explanation for this age grouping. The disease is characterized by swelling, redness and pain in the extremities, and becomes difficult to manage as it progresses to ulceration. Usually the tips of fingers and toes are affected; less frequently the ear lobes and the tip of the nose. These patients are frequently very cold-sensitive. As to management of these cases, I would prefer to yield to Doctor Wolff:

DOCTOR WOLFF: We can consider the disease under two general classifications. Primary Raynaud's disease affects the extremities symetrically. It may affect all four extremities and, as Doctor Young said, the tip of the nose and other areas as well. Some of these cases occur in women at the menopause; and it is possible that there is a definite relationship between the onset of the disease and the metabolic changes which occur in women at this time. In these patients we use vasodilating drugs, and we try to allay any mental apprehension they may have. We may recommend sypathectomy if an extremity becomes too involved, but this is not as effective in the arm as it is in the leg. The second classification includes a group of conditions which are accompanied by secondary Raynaud's phenomena. One of the most common of these is post-traumatic vasospasm, brought on by continuous exposure to high-frequency mechanical vibrations. Especially susceptible are operators of pneumatic hammers, drills and similar devices. We have seen stone cutters with one hand involved. It sometimes affects piano players. We have a very fast typist here in the city who has secondary Raynaud's in both hands. Allen, Barker and Hines give an excellent discussion of these conditions in their book, *Peripheral Vascular Diseases.*

DOCTOR SMITH: Unless Doctor Young has something to add, I would like for Doctor Wolff to discuss Thrombophlebitis.

DOCTOR WOLFF: I believe that the problems involved in the management of thrombophlebitis are among the most serious ones we encounter. The individual who has had so-called "milk-leg" while still comparatively young and productive, and with a living to make, faces a serious situation for life. I tell these patients that there are many like them who get along quite well, and that their chances are equally good. Now the patient with thrombophlebitis who is seen early and given adequate treatment without delay will recover and have a pretty good leg. Some textbooks still in use are full of references to occlusion of the deep vein as the important aspect of the pathology of thrombophlebitis. This simply is not true. Canalization takes place so rapidly following thrombosis that it is almost impossible to obtain a section of such a vein quickly enough not to show some early recanalization. In the progress of the disease to this stage, however, the wall of the vein is damaged in such a manner that the function of the valves is destroyed. There is also a severe associated vasospasm which involves all of the vessels in the affected extremity. The treatment, therefore, is obvious; further thrombosis must be prevented, and the vascular spasm must be relieved. The means of accomplishing these ends are fairly widely known, but there have been differences of opinion as to the order in which they should be used. It seems to me that the most rational procedure is to relieve the spasm immediately, and the simplest way to do this is with a paravertebral block. We can then use an anticoagulant or any combination of anticoagulants we desire. If it is a severe case, in which immediate action is essential, I use the regimen which has been described previously, consisting of intravenous heparin for its rapid effect, followed by dicumarol for sustained action. If intravenous procaine hydrochloride is used as the vasodilator, the average dose is 4 mg. per kilogram of body weight (usually made up in 0.1 per cent solution) injected very slowly (about 20 minutes for the 280 cc. of the above solution required for a 150 lb. individual). A solution of a barbiturate suitable for intravenous use (usually Pentothal or Nembutal) should, of course, be available to counteract toxic reactions to procaine if encountered. An airway should also be kept at hand. One point that deserves emphasis is that we should avoid needle punctures in the patient who is on anticoagulant drugs. This constitutes an additional argument for performing the paravertebral block before, rather than after beginning anticoagulant therapy. Instances of severe retroperitoneal hemorrhage resulting from performance of paravertebral block after depression of the clotting activity of the blood, have been reported in the literature. Several times in my own experience, in the course of sympathectomy on patients who have been given a paravertebral block after anticoagulant therapy was instituted, I have encountered sizeable hematomas in the retroperitoneal tissues, caused by accidental piercing of small arteries or veins in the process of administering the block. Therefore, if repeated relief from vasospasm becomes necessary after heparin or dicumarol, you must use intravenous procaine hydrochloride or one of the other vasodilators which we have mentioned previously. There is an important phase of the follow-up treatment of these patients; they *must* not be allowed to develop edema. We show them how to wear elastic bandages and they invariably ask how long it should be used. The only answer is that it may be two weeks, two months, two years, or a lifetime. If edema develops, the circulation will become insufficient, resulting in ischemia and eventual ulceration of the leg. In this area we have to use a little different type of pressure bandage than in cooler climates. In the northern states a para-rubber bandage can be used, but from Oklahoma on south, especially in the summertime, we have to use a woven elastic bandage with rubber incorporated, or a woven elastic stocking. Elastic stockings must be renewed frequently because they have a tendency to become loose around the ankles rather suddenly. In summary, whether your patient is going to have a good leg in the future depends directly upon the intelligence with which he co-operates with you in preventing the occurrence of edema.

DOCTOR YOUNG: I would like to indicate my complete agreement with all that Doctor Wolff has said in connection with edema. There is nothing harder to manage than one of these patients who has developed a brawny type of edema. They will have pain and discomfort, and eventually, ulceration. If you get nothing else from this discussion of thrombophlebitis, remember—*don't let edema develop.* Don't depend entirely upon even the most co-operative patient to take care of this entirely by himself. He should be watched and helped. Incidentally, I would

like to mention a new anticoagulant drug which you may expect to see on the market very shortly. I don't know yet what its trade name will be, but it is 4-hydroxy cumarin, No. 63. It is a dicumarol type of drug. It is characterized by a much longer action and by much less toxicity with regard to the production of bleeding from the kidney and from mucous membranes. It should be much easier to use in prolonged, maintenance type of anticoagulant therapy, but I imagine the same precautions would be in order concerning the possibility of bleeding as a result of paravertebral block or other parenteral therapy.

DOCTOR SMITH: We have a little time remaining for questions from the floor.

QUESTION: Will these patients with Buerger's disease actually quit smoking?

DOCTOR WOLFF: I have had some patients who have quit, but some of them won't. I think a lot depends upon the intelligence of the patient. One of our recent patients was a pretty bright young man who had been a pilot in the Army Air Force. Now you know what the definition of a smart man is; the man who agrees with you. Well, he said that about 10 Doctors had told him not to smoke, but one Doctor said it was all right, so he continued to smoke. I saw him lose a second leg. A higher percentage of our private patients will quit than will patients in our own hospital across the street. Of course, anyone can quit smoking. I don't see why it should be harder for these patients than for other people.

DOCTOR YOUNG: I would like to point out that some companies manufacture cigarettes for which they claim a low nicotine content, and others produce so-called "denicotinized" cigarettes. Both these claims are spurious. The Federal Trade Commission has pointed out that it is impossible for any manufacturer to keep the nicotine content of cigarettes uniformly low by any manner of blending of the varieties of tobacco available, although it is true that certain varieties do contain less nicotine than others. Secondly, there is no such thing as a de-nicotininzed cigarette, and the use of such products give a false sense of security. Even the amount of nicotine in the "de-nicotinized" product is sufficient to cause severe spasm. There is one case reported that I recall quite vividly; the individual was persuaded to stop smoking, but decided one day to try a single cigarette. There was an immediate and marked return of his symptoms.

DOCTOR SMITH: Since nicotine has figured rather prominently in our discussion this afternoon, I would like to close this conference by pointing out that it has several peculiar properties which make its systemic effects almost completely unpredictable. I have already mentioned that nicotine stimulates autonomic ganglia. The result is a mixture of sympathetic and parasympathetic (adrenergic and cholingeric) activity, with sympathetic effects predominating in the peripheral tissues (e.g., vasoconstriction) and parasympathetic effects predominating in the viscera. We are all familiar with this picture in the boy who tries his first cigarette; pallor of the skin, rapid heart, and hyperactivity of the gastrointestinal tract with nausea and vomiting. Large doses of nicotine, however, block these same ganglia. It has been shown that subcutaneous injection of the amount of nicotine usually absorbed in smoking two cigarettes (about 0.4 mg.) reduces gastric motility. Thus it would seem that the first dose of nicotine of a series —the first cigarette in the morning for instance, produces the most profound effect. Tolerance to nicotine develops quickly. Experimental animals which are given daily injections of nicotine in gradually increasing doses, are capable within a few weeks of withstanding in a single injection much more than the amount which would initially have been lethal. This would indicate that the victim of a peripheral vascular disease who smokes an occasional cigarette, having allowed his tolerance to disappear, is fully as vulnerable to damage as the "chain smoker."

ROCKY MOUNTAIN SOCIETY HAS MID-SUMMER MEET

The Fourteenth Annual Mid-Summer Conference of the Rocky Mountain Radiological Society will be held in Denver at the Shirley-Savoy Hotel August 7, 8, and 9, 1952.

Approximately 20 well known out of state guest speakers will participate in the program. Round table discussions will be held in connection with luncheon meetings each day. Evening meetings will include a joint session with the Denver Medical Society, followed by a Dutch lunch, and an informal banquet with entertainment. The annual picnic on Saturday afternoon will conclude the conference.

President's Page

About the saddest commentary on the modern state of near chaos is that there are too many men making history who have never read any.

We have no way of judging the future but by the past, and the realistic evaluation of our past experience should enable us to avoid mistakes and pitfalls now.

The Lieutenant saw his bomb load explode on a power plant, blowing it to smithereens, and remarked, "There goes up *my* income tax." This is the realistic approach and he had learned something from current history.

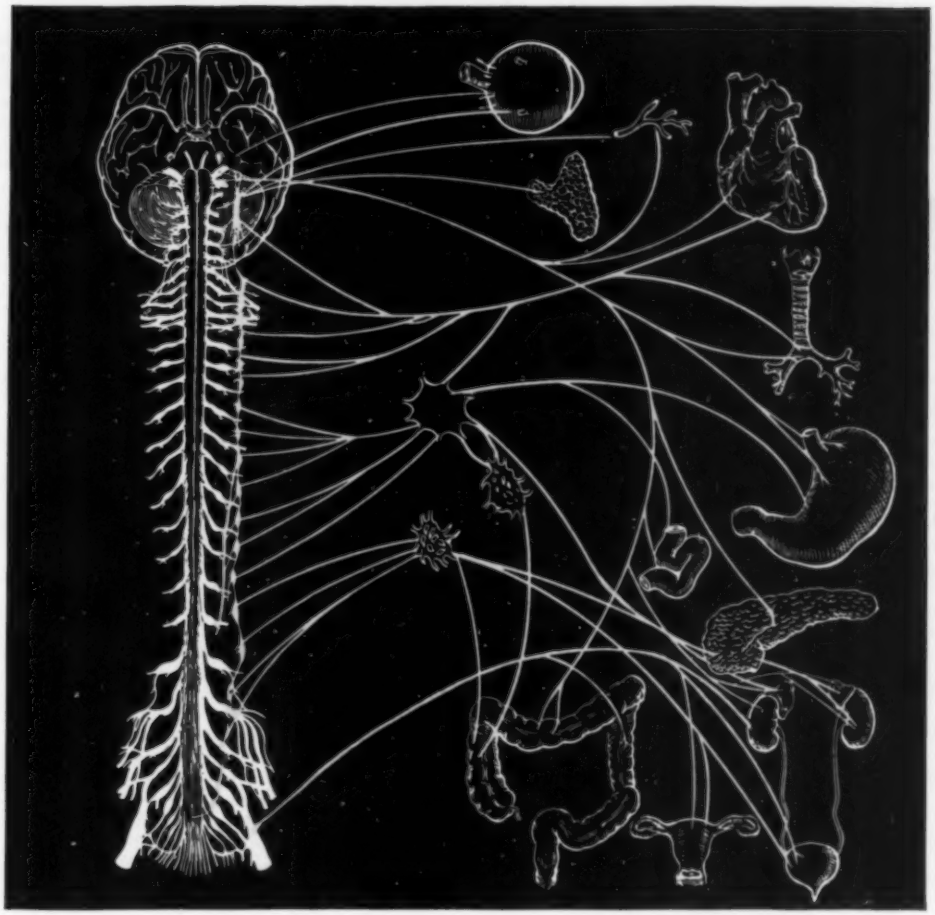
Medical history, too, is worthwhile and is peculiarly inspirational since the lives of interesting people made it. A move has been on foot for a long time for us to assemble and preserve the history of Oklahoma medicine which will be irretrievably lost otherwise. Our council recently acted on the proposal and agreed to underwrite part of the expense.

The chief reason for calling this matter to your attention here is to inform you beforehand that a representative of the council will call on you before long and to urge that you assist him in gathering any historical data, biographical sketches, official documents, or interesting anecdotes that might be used in this work. The older members of our society will especially take note, for it is you who will be able to make the most valuable contributions.

The mule is the only animal that has neither pride of ancestry, nor hope of posterity. We are blessed by having both. Let's keep alive the one that as the other is achieved they may share our common heritage.

Agnes R Sugg.

President



Excess neural stimulation over the parasympathetic subdivision plays an important role in such clinical conditions as peptic ulcer, certain forms of gastritis, pylorospasm, pancreatitis, spastic colon, bladder spasm and hyperhidrosis.

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RESEARCH IN THE SERVICE OF MEDICINE **SEARLE**

CURRENT ACTIVITIES AT THE OKLAHOMA MEDICAL RESEARCH FOUNDATION

EDWARD C. REIFENSTEIN, JR., M.D.

DIRECTOR, OKLAHOMA MEDICAL RESEARCH FOUNDATION

This is the eighth in a series of monthly articles concerning the activities of the Oklahoma Medical Research Foundation. This article will deal with the program of the laboratories for basic research and training which have been developed at the Oklahoma Medical Research Institute and Hospital.

The laboratories on the north side of the third floor of the Oklahoma Medical Research Institute Building are being devoted to basic research and training under the direction of Dr. Charles D. Kochakian, Associate Director. These laboratories consist of two units containing three laboratories each and already are occupied by seven assistants.

The financial support of the basic research and training program is derived from funds awarded to the Oklahoma Medical Research Foundation and to Doctor Kochakian by the national organization of the American Cancer Society, by the national organization of the American Heart Association, and more recently by the local chapter of the American Heart Association. Another grant has been made by the Cooper Foundation of Nebraska to be used jointly by Doctor Kochakian at the Research Institute and by research workers at the Roscoe B. Jackson Memorial Laboratory at Bar Harbor, Maine. This small grant has permitted the development of a close liaison between the Research Institute and the Roscoe B. Jackson Memorial Laboratory.

The work in these laboratories is concerned for the present with the role of hormones in the regulation of growth processes, and in a continuation of studies in which Doctor Kochakian has pioneered. In general, the studies are concerned with the influence of hormones in metabolic processes and on various enzyme systems, and the metabolism of the androgenic steroid hormones.

The following specific projects are now under investigation:

1. The effect of androgens on oxidative enzyme systems in various tissues is being studied.

2. The factors affecting the metabolism of androgens by the various tissues are being determined and the products formed by metabolism are being isolated.

3. Methods for paper chromatography of androgens are being developed to facilitate studies on the metabolism of steroid hormones.

4. The effect of cortisone and related corticoids on the heart muscle and other tissues is being investigated. This study is especially directed towards a search for factors which cause cortisone under some conditions to be very destructive to heart muscle. The Roscoe B. Jackson Memorial Laboratory under the Cooper Foundation grant is cooperating in this project in providing mice of various pure genetic strains.

5. As a corollary to project Number 4, certain enzyme systems are being studied in various tissues including the heart muscle of the animals that are being treated with cortisone and related corticoids.

6. The relationship of the thyroid gland to metabolic and enzymatic effects of androgens is being studied in rats that have been rendered hypothyroid by surgical removal of their thyroid glands.

7. The efficacy of orally-administered androgens, as judged by organ weights, food intake, and tissue enzyme changes, is now in the process of being evaluated.

8. Further studies on the mechanism of the metabolic effect of the parathyroid hormone have been completed. These studies were carried out in cooperation with two Italian investigators in Milan, Italy, in order to resolve differences in results reported by their laboratory with those from Doctor Kochakian's laboratory. Thus, identical experiments were designed to be carried out independently in the two countries and the results compared.

The fundamental research program will provide opportunities for people in various stages of their training periods to work together for their further advancement. Properly qualified assistants will be permitted to do graduate work at the Oklahoma Medical Research Institute towards the Master of Science or Doctor of Philosophy degrees, conferred by the University of Oklahoma. In addition, arrangements are in progress for a cooperative graduate program with Oklahoma A. and M. College.

At the post-doctorate level, Dr. Thomas C. Smith who received the Ph.D. degree in 1951 in the Biology Department, Harvard University, is working in the basic research and training laboratories. He is obtaining advanced instruction and experience in the field of hormones and oxidative enzymes.

At the graduate level, Mr. Dan Nall, who has an M.S. degree in Chemistry, has completed most of his course work towards the Ph.D. degree in the Chemistry Department at the University of Oklahoma. He is doing his thesis work on "Factors Affecting the Metabolism of Androgens by Tissues." Thus, the cooperative effort between the Research Institute and the Chemistry Department at the University has been initiated. Two of the other assistants, Miss Barbara Ann Reed and Miss Anita Mae Eisheid, are part-time graduate students in the Biochemistry Department at the University of Oklahoma School of Medicine.

In addition, provision has been made through the institutional grant from the American Cancer Society for two research assistantships during the summer months. The appointees for these positions will be chosen from promising students in the University of Oklahoma School of Medicine or from undergraduate students majoring in chemistry and biology, who have already shown an inclination towards biological research. It is the purpose of these summer fellowships to provide an opportunity for the development of the talent of young scientists in this area. In the summer of 1951, three such students were accepted as assistants in the laboratory on a voluntary basis, for at that time no funds were available for salaries. These individuals not only gained considerable experience but proved stimulating to other members of the laboratory staff.

An opportunity for advanced instruction in other laboratories has been instituted. Provisions were made for Doctor Smith to spend a month at the Enzyme Laboratories at the University of Wisconsin School of Medicine for special training in enzyme methods, and for Mr. Nall to visit the Sloan-Kettering Institute for Cancer Research, New York City, for instruction in methods concerned with stroid analyses. This type of particular training will be expanded as funds to finance it become available. At the present time a small sum of money has been made available through the institutional grant awarded by the American Cancer Society.

All of the present participants in the basic research

and training program have taken part in the Biochemistry Seminar. As a result, most of the lectures given this past semester have been delivered by Doctor Kochakian and his assistants. Furthermore, Doctor Kochakian delivered four lectures in the Biochemistry course to the medical students of the University of Oklahoma School of Medicine, and was responsible jointly with Dr. Dale Clark of the Biochemistry Department for two of the graduate seminar courses: (1) Biochemistry of Hormones, and (2) Enzymes.

Thus, in the short space of time since the inception of this portion of the activities of the Oklahoma Medical Research Institute and Hospital, the teaching phase of the basic training program not only has been initiated, but has been integrated, to mutual advantage, with the appropriate departments of the University of Oklahoma. In addition, liaison has been established for training purposes with other institutions. The Oklahoma Medical Research Foundation, therefore, is beginning to fulfill its promise as a center of advanced education in the fields of Medicine and Allied Sciences.

BLUE SHIELD BENEFITS INCREASED; BLUE CROSS RATES RAISED

New membership rates and benefit changes for Oklahoma's Blue Cross Plan will go into effect beginning July 1, Arthur S. Risser, M.D., president of the hospital care Plan's Board of Trustees, announced recently.

The new rates, which become effective July 1, or on the member's first payment thereafter, represent increases in monthly dues ranging from 10 to 20 cents for single persons and from 50 to 60 cents for a family.

N. D. Helland, executive director of Oklahoma Blue Cross and Blue Shield, pointed out that the Blue Cross Plan will increase the private room benefit to $6.00 per day. Otherwise, he said the Plan will continue to provide the same "service" benefits available to Oklahoma Blue Cross members as in the past. The enrollment requirements will remain the same, and members may still retain their membership after reaching the age of 65, when the retire from their place of employment, or when they leave their place of employment.

At the same time, Helland said, the Oklahoma Blue Shield Plan, surgical-medical-obstetrical care companion Plan to Blue Cross, will make some important additions to its benefit schedule. X-Ray therapy and radium therapy benefits for maligant conditions will now be available to Blue Shield members. Payments for these benefits range from $3.00 to a maximum of $150.00. Blue Shield membership rates remain the same.

In announcing the new Blue Cross rates, Helland said the 21 man Board of Trustees, which represent the public, the medical profession, and the hospitals, had found it necessary to "engage in a program of making necessary benefit changes and of pricing our service to reflect rising costs."

Some community groups, home demonstration club groups, farm organization groups, professional groups, etc., will be responsible to the member hospitals for a Member Participation Payment of $3.00 per day while a bed patient in such hospital.

The deductible feature will work much like the system now in use for automobile collision insurance, he said. The member will pay the first three dollars of the Blue Cross benefits used and the Plan will pay all over that amount.

"The utilization of Blue Cross benefits by some of these groups has in the past exceeded the amount of dues these groups have paid into the Plan," he said, in explaining why this step is necessary.

Cook County
Graduate School of Medicine

ANNOUNCES CONTINUOUS COURSES

SURGERY—Intensive Course in Surgical Technic, Two Weeks, starting August 4, August 18, September 8.
Surgical Technic, Surgical Anatomy & Clinical Surgery, Four Weeks, starting September 8, October 20.
Surgical Anatomy & Clinical Surgery, Two Weeks, starting September 22, November 3.
Surgery of Colon & Rectum, One Week, starting September 15.
Gallbladder Surgery, Ten Hours, starting October 20.
Basic Principles in General Surgery, Two Weeks, starting September 8.
General Surgery, Two Weeks, starting October 6.
General Surgery, One Week, starting October 20.
Breast and Thyroid Surgery, One Week, starting October 6.
Esophageal Surgery, One Week, starting October 13.
Thoracic Surgery, One Week, starting October 20.
Fractures & Traumatic Surgery, Two Weeks, starting October 6.

GYNECOLOGY—Intensive Course, Two Weeks, starting September 8, October 20.
Vaginal Approach to Pelvic Surgery, One Week, starting September 22, November 3.

OBSTETRICS—Intensive Course, Two Weeks, starting September 29, November 3.

PEDIATRICS—Informal Clinical Course every two weeks.

MEDICINE—Electrocardiography & Heart Disease, Two Weeks, starting July 14.
Gastroscopy & Gastroenterology, Two Weeks, starting September 15, November 3.

UROLOGY—Intensive Course, Two Weeks, starting September 8.
Cystoscopy, Ten Days, starting every two weeks.

DERMATOLOGY—Intensive Course, Two Weeks, starting October 13.

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Medical School Notes -- Message From The Dean

DR. MARK R. EVERETT, DEAN, SCHOOL OF MEDICINE

One of the meetings which I have most enjoyed is the yearly Conference held in May with the newly appointed, or reappointed, Preceptors for the coming year. There are always three or four new Preceptors present, due to a policy of rotating some of these appointments each year, and those who have previously served relate their individual experiences for the benefit of the physicians who are new to the program. In listening to the Preceptors tell of their ideas of what makes a good Preceptorship, it is easy to see why the Preceptorship Program has been so successful from its beginning. No rigid program has been outlined for conducting a Preceptorship, thus permitting development around the Preceptor's personality and the medical conditions of the community. The results have been so gratifying to us at the School that we find ourselves "hard-put" to adequately express our appreciation.

In speaking of their work with the students, the Preceptors often make such remarks as: "I just guide them, maybe prod them a bit, and let them get the 'feel' of office practice;" or, "Why the folks in our town like having these boys around, they know that they are still students, but we all call them 'doctor,;" and, heard frequently, "I learn as much from the boy as he does from me." So you see the spirit is good. The students look forward to their preceptorship quarter and surely there is no other time during their undergraduate medical training when they can get a more general insight into the profession they have chosen than in these 11 weeks of close daily association with a practicing physician. These physicians exhibit a definite realization of how great their responsibility is to their students, a responsibility that they undertake on a 24 hour a day basis. Apparently, though, the rewards for their participation in the program are sufficient, since those who have served do not ask to be relieved. Here a problem arises for the Preceptorship Committee each year in its efforts to decide which of the Preceptorships should be rotated to allow room for the appointment of new Preceptors. This Committee is composed of two representatives each from the Oklahoma State Medical Association, the Alumni Association, and the Faculty, with the Associate Dean in Charge of Student Affairs serving as an ex-officio member. The Committee has felt very strongly that an opportunity to serve should be given to all those who qualify from the standpoint of sincere interest and ability to give to the students good advice and supervised experiences in the practice of medicine. An attempt is made, also, to distribute the Preceptorships in the various areas of the State. This has been somewhat difficult to do because more applications for appointment are received from the central and west portions of the State.

Although an authoritative survey has not yet been made to determine what effect the Preceptorship Program has had on encouraging young physicians to set up practice in the smaller towns, from a casual look at the record there appears to be a definite trend to such localities. Some of the students have returned to enter practice with their former Preceptors, and others have found towns in need of a physician and have started practice there.

Physicians appointed as Preceptors for the period June, 1952, to May, 1953, are: Dr. Carl H. Bailey, Stroud; Dr. Ned Burleson, Prague; Dr. Wallace Byrd, Coalgate; Dr. John M. Carson, Shawnee; Dr. M. A. Connell, Picher; Dr. Joe L. Duer, Woodward; Dr. J. William Finch, Hobart; Dr. Leon C. Freed, Perkins; Dr. Ray H. Lindsey, Pauls Valley; Dr. W. C. McCurdy, Jr., Purcell; Dr. E. A. McGrew, Beaver; Dr. John A. McIntyre, Enid; Dr. O. C. Newman, Shattuck; Dr. Van S. Parmley, Mangum; Dr. James S. Petty, Guthrie; Dr. Robert S. Srigley, Hollis; Dr. Aubrey E. Stowers, Sentinel; Dr. John R. Taylor, Kingfisher; Dr. C. A. Traverse, Alva; Dr. Henry C. Wolfe, Hugo; and Dr. J. F. York, Madill.

Other physicians who have served as Preceptors in previous years include: Dr. T. D. Benjegerdes, Beaver; Dr. A. L. Buell, Okmulgee; Dr. A. C. Little, Mineo; Dr. Herbert A. Masters, Tahlequah; Dr. J. M. McMillan, Vinita; Dr. James F. McMurry, Sentinel; Dr. V. W. Pryor, Holdenville; Dr. Roscoe Walker, Pawhuska; Dr. A. J. Weedn, Duncan; Dr. L. R. Wilhite, Perkins; and Dr. Earl M. Woodson, Poteau. In addition, each year there are between 50 and 60 physicians who serve with the Preceptors as Associate Preceptors.

There is no doubt that the Preceptorship Program is now an effective part of the senior curriculum, and not only in Oklahoma. A recent report shows that nearly one-fourth of the medical schools have begun a Preceptorship Program during the past few years, differing somewhat in length of time, but all aiming at the same general principle. I think we have a right to be proud of the fact that our's was the second school to start a Preceptorship Program. (The University of Wisconsin has had such a plan in operation for many years.) A special word of thanks goes to the Alumni Association for urging the idea.

Dean Marsh tells me that the students bi-weekly "log" of their Preceptorship experiences provides very interesting reading, and that from them he knows that these experiences mean a lot to the students. One comment that came from a student who was in the first class to participate in the program was: "They told me I was going out to learn about small town practice of medicine, but I found it "big town" medicine practiced in a small town."

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OBITUARIES

E. ELDON BAUM, M.D.

1896-1952

E. Eldon Baum, M.D., Oklahoma City physician who had been completely disabled the last three and a half years, died at his home May 6, 1952.

He was a native of Kansas City and a graduate of the University of Oklahoma School of Medicine and practiced in Tulsa and Vinita before coming to Oklahoma City. He was a member of St. Paul's Episcopal church and of the Masonic order. He was also a member of the Co-operative Club and the Oklahoma City Chamber of Commerce and had been an active worker for the symphony society.

Survivors include the widow of the home, two sons and a brother.

ROBERT L. MITCHELL, M.D.

1876-1952

Robert L. Mitchell, M.D., died May 15 in the Veterans Hospital, Muskogee, where he served on the staff for 25 years.

He had retired from the staff in 1948 but after a few months joined the staff of the Eastern Oklahoma Hospital at Vinita where he had served until his recent illness.

Doctor Mitchell was born in Delaware County and prior to World War I he practiced at Vinita and Welch after graduating from Shawnee Medical School. He served in the medical corps in World War I. He was a member of the Masonic Lodge.

Survivors include a son, three sisters, five brothers and three grandchildren.

K. D. GOSSOM, M.D.

1878-1952

K. D. Gossom, M.D., pioneer Custer County physician, died May 15. He had been bedfast since Christmas.

Born in Milton, Kentucky, Doctor Gossom came to Custer City in 1903. He retired from active practice in 1940 and moved to Clinton. However, during the war, he re-entered practice to act as medical supervisor for the firm which built the Clinton Naval Air Station and later was medical supervisor of the Dupont plant at Hanford, Wash.

We was a member of the First Methodist church, the Masonic Lodge, and the Shrine.

Survivors include his widow of the home, three daughters, one son, three brothers, one sister, and five grandchildren.

ERNEST THOMAS, M.D.

1883-1952

Ernest Thomas, M.D., Quinton, died May 8, 1952. Born at Tupelo, Miss., he spent most of his life in Oklahoma. He was graduated from the Arkansas School of Medicine in 1911 and settled near Enterprise.

He was a member of the Baptist church, Masonic Lodge and the Shrine.

Survivors are the widow, three sons, a daughter, three brothers and two sisters.

ANDREW JACKSON SNELSON, M.D.

1862-1952

Andrew Jackson Snelson, M.D., member of the first Oklahoma state legislature and a practicing physician for 54 years, died May 4 at his home in Checotah.

He had made his home in Eastern Oklahoma and practiced medicine continuously since his graduation from the University of Arkansas School of Medicine in 1898. Born in Johnson County, Ark., he had taught school in his home county for 19 years before entering medical school. He first established his practice at Wister and then moved to Oktaha. He served as first mayor of both cities.

He was a member of the Presbyterian church, Masonic lodge, Knights Templar, Oddfellows, Shrine and took an active interest in politics.

Survivors include his widow of the home, seven sons, a step-daughter, three half-brothers and many grandchildren.

RADIOLOGISTS ELECT NEW OFFICERS

Newly elected officers of the Oklahoma State Radiological Society for two years terms are: president, Walter E. Brown, M.D., 2020 South Xanthus, Tulsa; vice-president, Edward D. Greenberger, M.D., Medical Arts Bldg., McAlester; and secretary-treasurer, John R. Danstrom, M.D., Medical Arts Bldg., Oklahoma City.

POSTGRADUATE COURSE OFFERED IN DENVER

Applications may now be sent in for the postgraduate course, Diagnosis in Internal Medicine with Emphasis on Physical Diagnosis, offered by the University of Colorado School of Medicine, 4200 East Ninth Ave., Denver 20, Colo., July 2-25. Registration fee is $5.00 and should be sent with registration.

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BOOK REVIEWS

MEDICAL BIOGRAPHIES. The Ailments of Thirty-Three Famous Persons. Philip Marshall Dale, M.D., University of Oklahoma Press, Norman. 1952. Price $4.00.

Following the author through this intriguing volume amounts to an interesting adventure. The journey leads from Buddha in the fifth century B.C. to Robert Louis Stevenson in the 19th century. It supplies intimate knowledge concerning the lives of 33 famous persons.

For the non-medical reader, the book supplies interesting historical and biographical data and whets the popular medical curiosity so obvious among modern readers. For physicians it becomes an interesting game with varied diagnostic speculations which may not always lead to agreement with the author. This is natural since consultations concerning even living patients often lead to differences of opinion. This necessary element of uncertainty makes the game more worthwhile. The case histories with the well ordered diagnostic discussions should prove stimulating and instructive to medical students as well.

With one exception, each biographical sketch is accompanied by a portrait of the famous person under discussion. This exception carries a note of sadness. Obviously there were no photographers on Pigeon Creek in the backwoods of Indiana where Nancy Hanks Lincoln lived and prematurely died of "milk sickness."

The work has literary as well as scientific merit and should have a wide reading.—Lewis J. Moorman, M.D.

LET'S HAVE HEALTHY CHILDREN, Adelle Davis, A.B., M.S., Consulting Nutritionist, Harcourt Bruce and Company, New York, 1951.

In a very interesting, stimulating and informative presentation, though at times a bit dogmatic and occasionally provocative, Adelle Davis covers the importance of proper diet in the welfare of the pregnant mothers and its effect on the growth and development of the fetus, the infant and the child.

The author has a practical approach to the problem which she has gained from years as a nutritionist in close cooperation and with the assistance of members of the medical profession.

The essentials of a good diet and the methods and manner of providing them are discussed candidly, together with the presentation of easily readable and usable charts on food analysis.

Especially would we emphasize her views on the importance of optimum health before pregnancy occurs and the value of the diet in the preconception period as well as during pregnancy and lactation.

Everyone will enjoy and benefit from Chapter 14 on "Controversies Applying to All Babies." Very enlightening too, is her treatment of the dietary problems of the pre-school child. She stresses the value of protein, yeast, blackstrap molasses and yogurt in attainment and maintenance of optimum health of all ages.

Much helpful information is contained in the discussion on the importance of soil factors and mineral content, on the storage and processing of foodstuffs in relation to their efficiency in nutrition.

One might accuse the author of over-simplification of some of the problems covered, such as COLIC, FOOD ALLERGY, THUMB SUCKING, the use of a PACIFIER and WEANING from the bottle.

All in all, however, we would recommend the book as well worth reading.—George H. Garrison, M.D.

HAVE YOU HEARD?

H. A. Foerster, M.D., Oklahoma City, attended the 84th Annual Meeting of the Mississippi State Medical Association held in Jackson, as guest of James Thompson, M.D., President.

A. M. Brown, M.D., Perry, has been elected president of the hospital staff of that city.

Charles Green, M.D., Lawton, is building a new 50x80 foot, one story, brick veneer clinic building.

E. E. Waggoner, M.D., Tonkawa, was recently honored when the residents of his community proclaimed "Dr. Waggoner Day."

J. William Finch, M.D., Hobart, spoke on "Medicine as a Career" when he addressed high school senior boys participating in the Kiwanis vocational guidance program.

L. C. Freed, M.D., Perkins, was a recent guest speaker at a meeting of the ladies of the Elm Grove Community.

Lonnie C. Redus, M.D., who has just completed a residency at University Hospital, Oklahoma City, has joined the Weatherford hospital staff.

Bob Lowery, M.D., Poteau, was recently featured in the "Know Your Neighbor" column in his hometown newspaper.

Capt. Wm. Miller, formerly of Oklahoma City, is cheif of orthopedics at the P.O.W. hospital at Pusan. He has been overseas 17 months.

Rossler H. Henton, M.D., has returned to his home town of Rush Springs to establish his practice after completing his internship at Hillcrest Hospital in Tulsa.

Charles N. Talley, M.D., Marlow, recently attended a postgraduate course at Cook County Graduate School of Medicine in Chicago.

MEDICAL SCHOOL ADMITS 100 FOR FIRST YEAR CLASS

With more than 200 applications received and reviewed, 100 first year students were accepted for admission to the University of Oklahoma School of Medicine for the first year class of 1952.

Forty counties are represented by students in the class and applicants accepted previously attended the following colleges and universities: Oklahoma University, Oklahoma City University, Oklahoma A. and M. College, Oklahoma Baptist University, Central State College, Northeastern State College, Northwestern State College, Southeastern State College, Southwestern State College, East Central State, Phillips University, Tulsa University, Langston University, all of Oklahoma and the following out of state schools: University of Rochester, Austin College, Westminster College, University of Wichita, McPherson College, Lafayette College, Northeastern University of Boston, and Abilene Christian College.

The class will include one woman student and 19 of the students are veterans. The average age of the class is 21.56 and the average age of the 10 alternates is 24.3.

Number of students accepted from the various counties is as follows:

Alfalfa, 1; Beaver, 1; Beckham, 1; Bryan, 2; Caddo and Canadian each have 1 alternate; Cherokee, 2 (also 1 alternate); Choctaw, 1 (1 alternate also); Cimarron, 1; Cleveland, 3; Comanche, 4; Craig, 1; Custer, 1; Garfield, 4; Grady, 1; Grant, 1 alternate; Greer, 1; Harmon, 1; Harper, 1; Haskell, 1; Hughes, 3; Jackson, 1; Kay, 2; Kiowa, 1; LeFlore, 1; Logan, 2; McClain, 1; Major, 1; Muskogee, 3 (2 alternates); Nowata, 1; Oklahoma, 20 (2 alternates); Okmulgee, 2; Osage, 1; Ottawa, 1; Payne, 4 (1 alternate); Pottawatomie, 1; Seminole, 5; Sequoyah, 2; Texas, 2; Tulsa, 12; Washington, 2; Washita, 4; and Woods, 1.

CLASSIFIED ADS

NOTICE: During month of July will be available to work in physician's office for two or three weeks while he takes vacation. Prefer to work in Oklahoma City office. For further information write Key O, care of the Journal.

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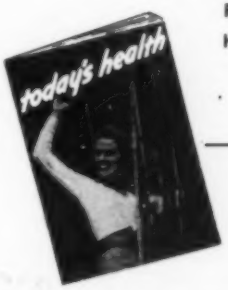

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